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U.S. DEPARTMENT OF THE INTERIOR
March 3 1849

Water Resources Data South Dakota

Water Year 1981

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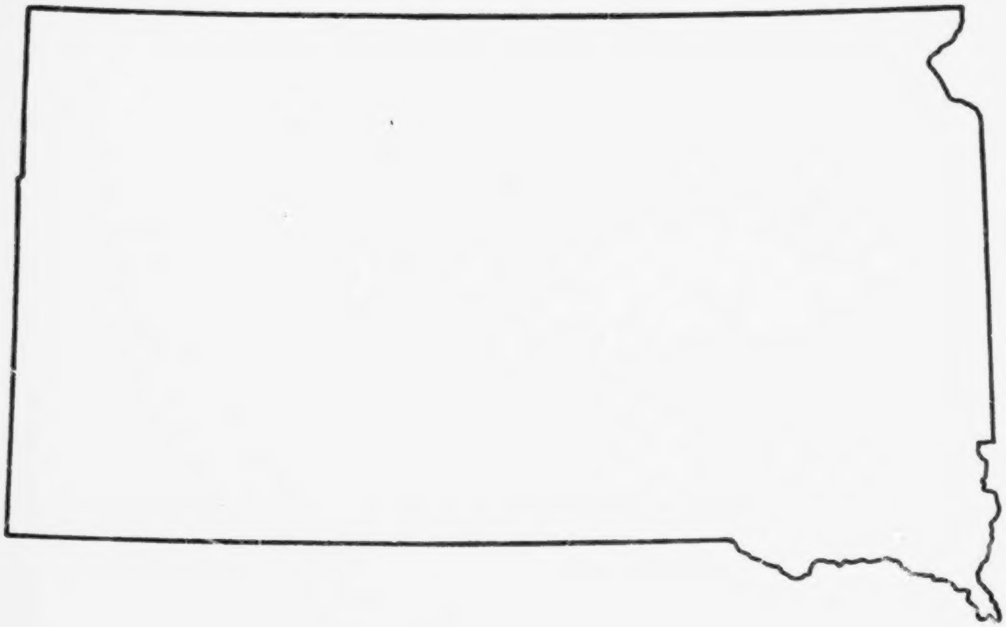

U.S. GEOLOGICAL SURVEY WATER-DATA REPORT SD-81-1
Prepared in cooperation with the State of South Dakota
and with other agencies

CALENDAR FOR WATER YEAR 1981

1980

OCTOBER

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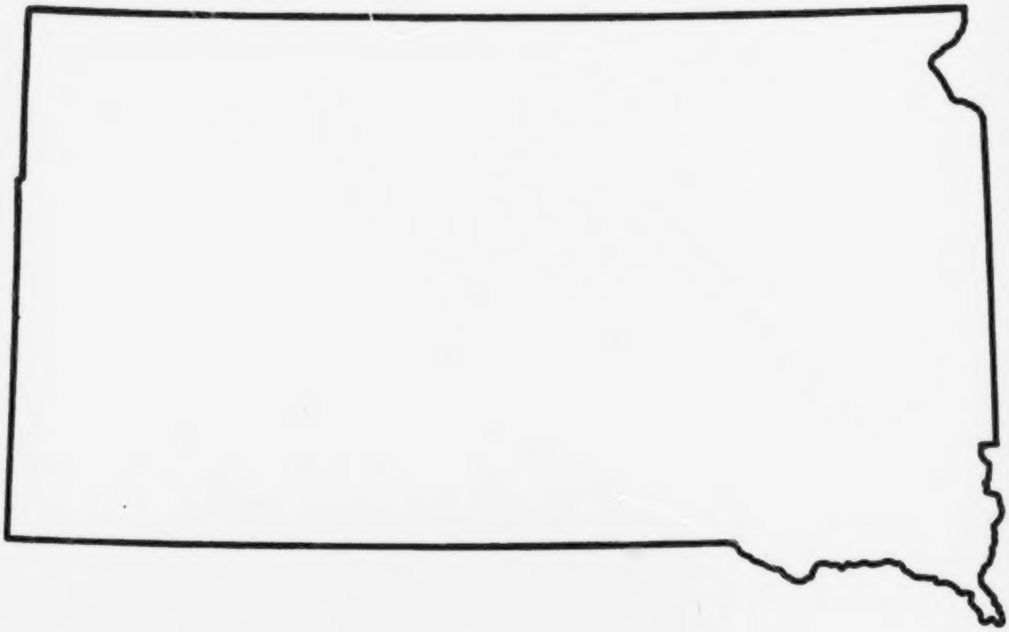
DEPARTMENT OF THE INTERIOR
March 3, 1849

Water Resources Data
South Dakota
Water Year 1981



U.S. GEOLOGICAL SURVEY WATER-DATA REPORT SD-81-1
Prepared in cooperation with the State of South Dakota
and with other agencies

I

UNITED STATES DEPARTMENT OF THE INTERIOR

JAMES G. WATT, Secretary

GEOLOGICAL SURVEY

Dallas L. Peck, Director

For information on the water program in South Dakota write to
District Chief, Water Resources Division
U.S. Geological Survey
Room 317, Federal Building
200 4th St. S.W.
Huron, South Dakota 57350

1982

II

PREFACE

This report was prepared by personnel of the South Dakota district of the Water Resources Division of the U.S. Geological Survey under the supervision of R. E. Fidler, District Chief, and Alfred Clebsch, Jr., Regional Hydrologist, Central Region. It was done in cooperation with the State of South Dakota and with other agencies.

This report is one of a series issued by State. General direction for the series is by Philip Cohen, Chief Hydrologist, U.S. Geological Survey, and Robert J. Dingman, Assistant Chief Hydrologist for Scientific Publications and Data Management.

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Water resources data for the 1981 water year for South Dakota consists of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels in wells. This report contains discharge records for 104 gaging stations; stage and contents for 10 lakes and reservoirs; water quality for 20 gaging stations; and water levels for 8 observation wells. Additional water data were collected at various sites, not part of the systematic data-collection program, and are published as miscellaneous measurements and analyses. These data represent that part of the National Water Data System operated by the U.S. Geological Survey and cooperating State and Federal agencies in South Dakota.

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[Letter after station name designates type of data: (d) discharge, (e) gage height, elevation, or contents, (c) chemical, (b) biological, (m) microbiological, (p) pesticide, (t) water temperature, (s) sediment]

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WATER RESOURCES DATA FOR SOUTH DAKOTA, 1981

INTRODUCTION

Water resources data for the 1981 water year for South Dakota consist of records of stage, discharge, and water quality of streams; stage, contents, and water quality of lakes and reservoirs; and water levels and water quality of ground water. This report contains discharge records for 113 gaging stations; stage and contents for 10 lakes and reservoirs; water quality for 22 gaging stations; and water levels for 6 observation wells. Additional water data were collected at various sites, not involved in the systematic data collection program, and are published as miscellaneous measurements. These data represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in South Dakota.

Records of discharge or stage of streams, and contents or stage of lakes and reservoirs were first published in a series of U.S. Geological Survey water-supply papers entitled "Surface Water Supply of the United States." Through September 30, 1960, these water-supply papers were in an annual series and then in a 5-year series for 1961-65 and 1966-70. Records of chemical quality, water temperatures, and suspended sediment were published from 1941 to 1970 in an annual series of water-supply papers entitled "Quality of Surface Waters of the United States." Records of ground-water levels were published from 1935 to 1974 in a series of water-supply papers entitled "Ground-Water Levels in the United States." Water-supply papers may be consulted in the libraries of the principal cities in the United States or may be purchased from Branch of Distribution, U.S. Geological Survey, 604 South Pickett Street, Alexandria, VA 22304.

For water years 1961 through 1970, streamflow data were released by the Geological Survey in annual reports on a State-boundary basis. Water-quality records for water years 1964 through 1970 were similarly released either in separate reports or in conjunction with streamflow records. Beginning with the 1971 water year, water data for streamflow, water quality, and ground water are published as an official Survey report on a State-boundary basis. These official Survey reports carry an identification number consisting of the two letter State abbreviation, the last two digits of the water year, and the volume number. For example, this report is identified as "U.S. Geological Survey Water-Data Report SD-81-1." Water-Data reports are for sale by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

COOPERATION

The U.S. Geological Survey and organizations of the State of South Dakota have had cooperative agreements for the systematic collection of surface-water records since 1914, for ground-water levels since 1935, and for water-quality records since 1947. Organizations that assisted in collecting data through cooperative agreement with the Survey are:

Department of Water and Natural Resources, W. R. Neufeld, secretary.

East Dakota Conservancy Sub-district, J. L. Siegel, manager-engineer.

Black Hills Conservancy Sub-district, Ed Glassgow, manager-treasurer.

City of Watertown, J. O. Babcock, city engineer.

Assistance in the form of funds or services was given by the Corps of Engineers, U.S. Army; the Bureau of Land Management, U.S. Department of Interior; the Bureau of Reclamation, U.S. Department of Interior; the Fish and Wildlife Service, U.S. Department of Interior; the Environmental Protection Agency; and the Missouri River basin development program for gaging and water-quality stations.

Organizations that supplied data are acknowledged in station descriptions.

ACKNOWLEDGMENT

South Dakota district personnel who contributed significantly to the collection and preparation of the data in this report were: J. R. Little, chief, Hydrologic Data Collection and Analysis Section, E. M. Decker, D. W. Heyd, E. B. Hoffman, N. F. Leibbrand, M. D. Stevens, and D. R. Winter.

SUMMARY OF HYDROLOGIC CONDITIONS

Typically, precipitation was not uniform across the State during water year 1981. It varied from slightly greater than normal in the central part of the State to several inches less than normal in the Black Hills and most of the area east of the Missouri River. The data in table 1 compares the 1981 water year precipitation at five reporting stations with that of the long-term average. The data is from published reports of the U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

Table 1.--Comparison of current water year precipitation with average for January 1929 to December 1980, in inches.

Observation site	1981 water year precipitation	Average precipitation	Departure from average
Faith	15.96	15.42[a]	-0.54
Custer	11.57	18.11[b]	-6.54
Murdo	21.60	16.87[b]	-4.73
Aberdeen	15.98	18.71	-2.73
Sioux Falls	15.74	24.81	-9.07

[a] Data not available for 1948-51, 1973, and 1974.
[b] Data not available for 1951.

Surface Water

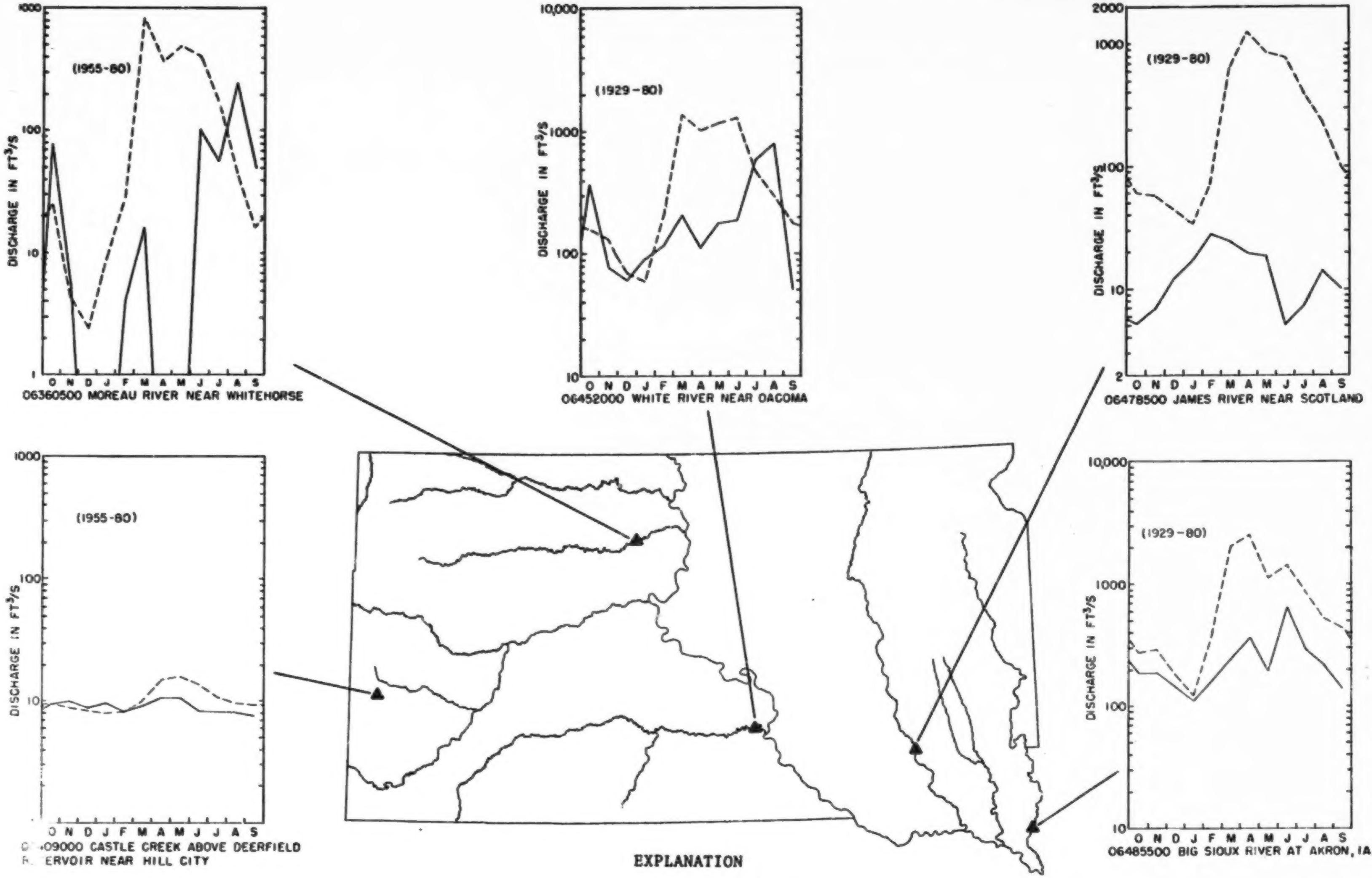
By any criteria, streamflow was less than normal during the water year. The monthly mean discharge at the five virtually unregulated streamflow-gaging stations shown in figure 1 reflect the almost total lack of snow accumulation available for spring runoff. Streamflow remained significantly less than normal the rest of the year except in a few basins that received rain from local thunderstorms. The hydrographs for the Moreau River near Whitehorse and the White River near Oacoma show late-summer rises resulting from these storms. The data in table 2 show that none of the five index stations had a peak during 1981 that exceeded the 2-year flood. The data in table 3 show that no new minimum discharge records were set this year. In summary, the sum of the discharges from these five stations, which drain about 50 percent of the State, was 28 percent of the long-term average flow. Combined storage in the four Missouri River main-stem reservoirs (Lakes Oahe, Sharpe, Francis Case, and Lewis and Clark) was 20,260,000 acre-feet at the end of the water year, a decrease of 1,818,000 acre-feet from the corresponding date a year ago.

Water Quality

Chemical quality of surface water in South Dakota varies considerably across the State. Long-term water-quality conditions for five water-quality stations in which mean monthly average dissolved-solids concentrations for the period of record are compared with monthly samples collected during the current year are shown in figure 2. Dissolved-solids concentrations ranged from as little as 216 mg/L at the Castle Creek station to as much as 4,070 mg/L at the Moreau River station during the 1981 water year. In general, the dissolved-solids concentrations during the 1981 water year were near the long-term dissolved-solids concentrations for these stations. The exception is the James River near Scotland station, which probably reflects minimal-runoff conditions in central South Dakota.

Ground Water

Water levels in wells, discharge of springs and wells, and water-quality data are key characteristics in monitoring ground-water trends; however, these hydrologic characteristics need to be integrated with other observations and ground-water system studies in order to have the fullest meaning and usefulness. In South Dakota, the U.S. Geological Survey regularly monitors a number of observation wells. Other wells, which are known as project wells, are used for specific (generally short-term) studies and, although they are not part of the observation-well program, data obtained from them also are made available. The hydrographs in figure 3 are from seven of the wells in the network.



EXPLANATION

—— WATER YEAR 1981

---- LONG TERM

▲ GAGING STATION

(1929-80) PERIOD OF RECORD

Figure 1.--Comparison of 1981 monthly mean to long-term monthly mean discharges.

Table 2.--Comparison of current-year maximum discharge with maximum for long-term periods.

		Peak discharges					
		1981 Water year			Long-term period		
Gaging station number and name	Period used	Peak (ft³/s)	Date	Return interval (years)	Peak (ft³/s)	Date	Return interval (years)
06360500 Moreau River near Whitehorse	1955-80	1,380	10-16-80	<2	25,600	3-24-78	23
06409000 Castle Creek above Deerfield Reservoir, near Hill City	1955-80	20	7-25-81	<2	906	6-17-65	>100
06452000 White River near Oacoma	1929-80	5,800	8- 8-81	<2	51,900	3-30-52	>100
06478500 James River near Scotland	1929-80	41	2-19-81	<2	15,000	4- 3-62	91
06485500 Big Sioux River at Akron, IA	1929-80	3,180	6-17-81	<2	80,800	4- 9-69	>100

Table 3.--Comparison of current-year minimum daily discharge with minimum for long-term periods.

		Minimum discharges					
		1981 Water year			Long-term period		
Gaging station number and name	Period used	1-day (ft³/s)	Date	7-day (years)	1-day (ft³/s)	Date	7-day, 10-year Return interval (years)
06360500 Moreau River near Whitehorse	1955-80	0	many days	0	0	many days	not determined
06409000 Castle Creek above Deerfield Reservoir, near Hill City	1955-80	6.0	2-10-81	6.7	2.0	several days	3.8
06452000 White River near Oacoma	1929-80	15	10-4,11-80	18	0	many days	3.4
06478500 James River near Scotland	1929-80	0.47	9-24-81	1.0	0	many days	1.6
06485500 Big Sioux River at Akron, IA	1929-80	78	2-12-81	83	4.0	1-17-77	19

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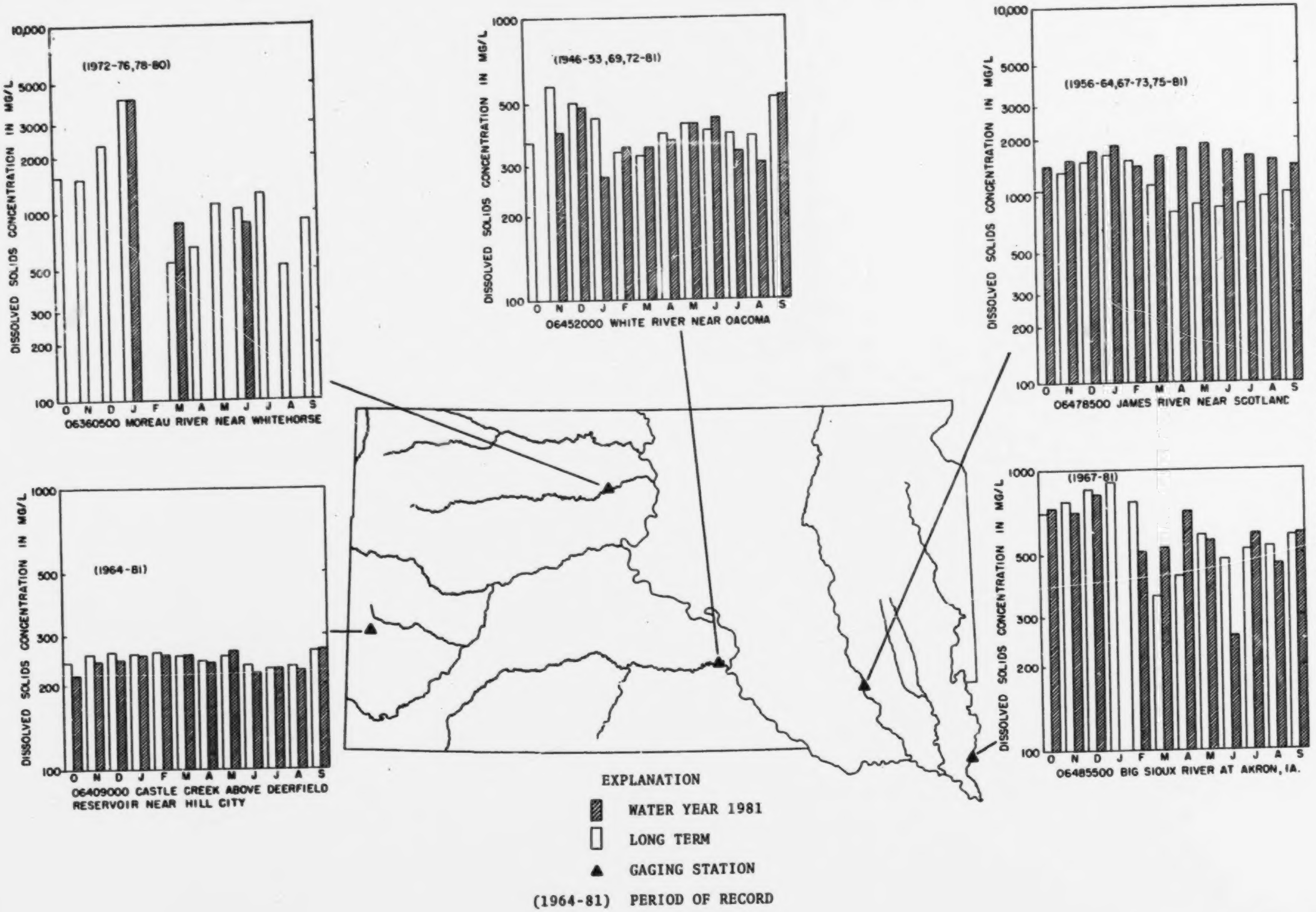


Figure 2.--Comparison of 1981 monthly dissolved-solids concentrations to long-term average monthly dissolved-solids concentrations.

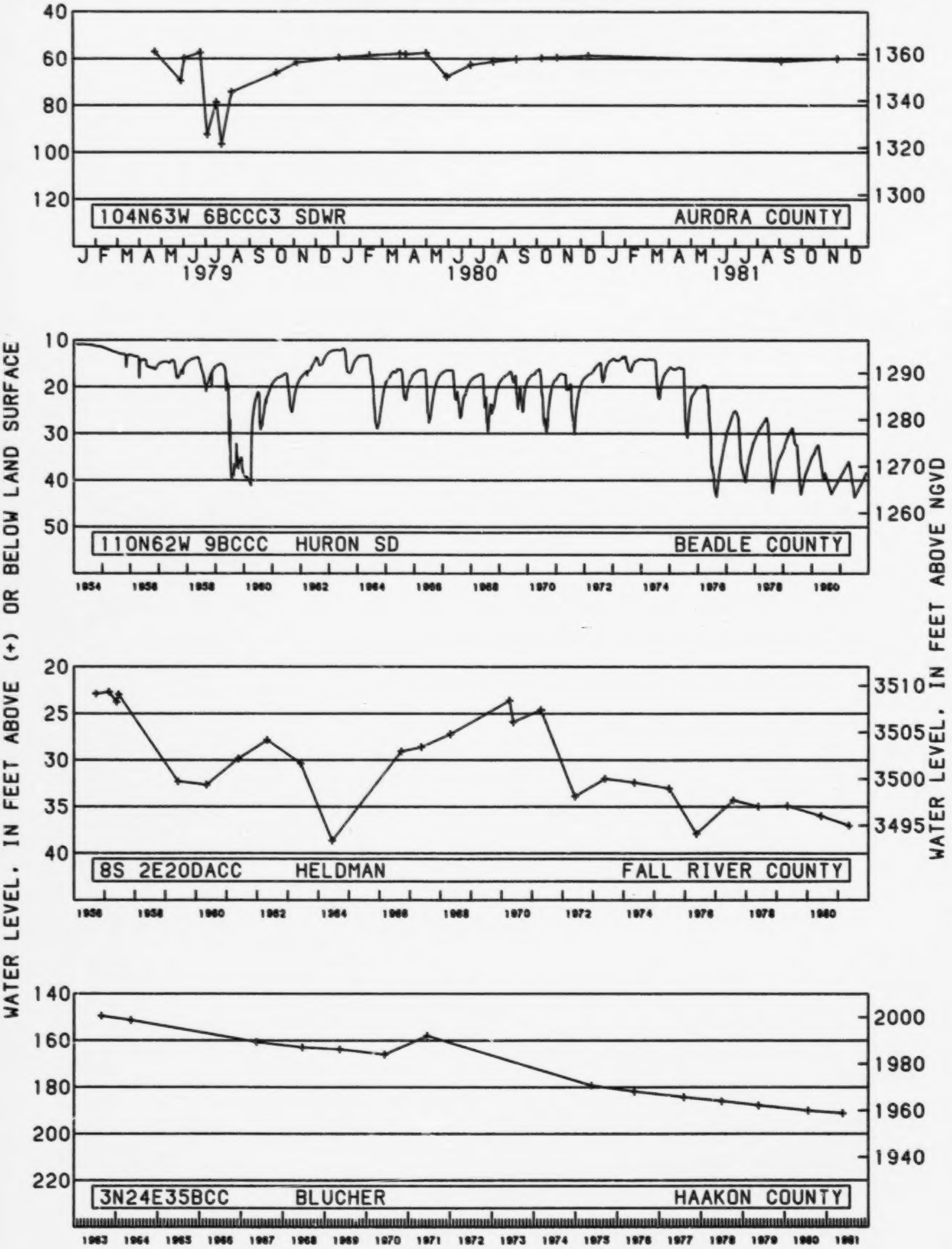


Figure 3.--Water levels from selected observation wells.

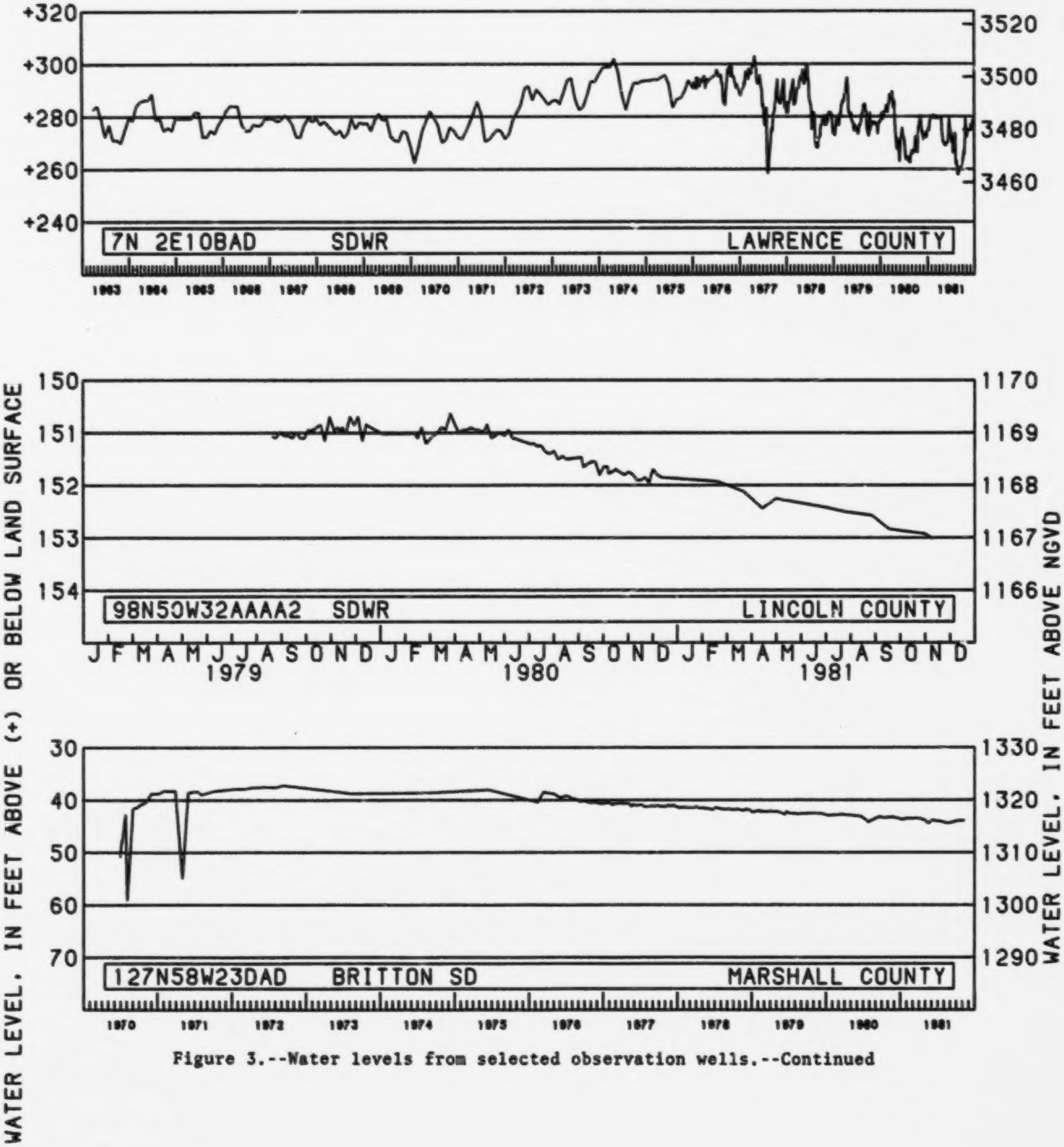


Figure 3.--Water levels from selected observation wells.--Continued

DEFINITION OF TERMS

Terms related to streamflow, water-quality, and other hydrologic data, as used in this report, are defined below. See also the table for converting English units to International System of units (SI) on the inside of the back cover.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is the primary energy donor in cellular life process. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measure of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

Aquifer is a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield significant quantities of water to wells and springs.

Artesian means confined and is used to describe a well in which the water level stands above the top of the aquifer, tapped by the well. A flowing artesian well is one in which the water level is above the land surface.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35°C. In the laboratory these bacteria are defined as the organisms which produce colonies within 24 hours when incubated at 35°C ± 1.0°C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestines or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms which produce blue colonies within 24 hours when incubated at 44.5°C ± 0.2°C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in intestines of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35°C ± 1.0°C on M-enterrococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Bed material is the unconsolidated material of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by microorganisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500°C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m^3), and periphyton and benthic organisms in grams per square meter (g/m^2).

Dry mass refers to the mass of residue present after drying in an oven at 60°C for zooplankton and 105°C for periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass, and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water, and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with natural water color or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll *a* and *b* are the two most common pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Control structure as used in this report is a structure on a stream or canal that is used to regulate the flow or stage of the stream or to prevent the intrusion of salt water.

Cubic feet per second per square mile (CFSM) is the average number of cubic feet of water flowing per second from each square mile of area drained, assuming that the runoff is distributed uniformly in time and area.

Cubic foot per second (FT^3/S, ft^3/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute or 0.02832 cubic meters per second.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Dissolved refers to the material in a representative water sample which passes through a 0.45 µm membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determination of "dissolved" constituents are made on subsamples of the filtrate.

Diversity index is a numerical expression of evenness of distribution of aquatic organisms. The formula for diversity index is:

$$\bar{d} = -\sum_{i=1}^{s} \frac{n_i}{n} \log_2 \frac{n_i}{n}$$

Where n_i is the number of individuals per taxon, n is the total number of individuals, and s is the total number of taxa in the sample of the community. Diversity index values range from zero, when all the organisms in the sample are the same, to some positive number, when some or all of the organisms in the sample are different.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the river above the specified point. Figures of drainage area given herein include all closed basins, or noncontribution areas, within the area unless otherwise noted.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Gage height (G.H.) is the water-surface elevation referred to some arbitrary gage datum. Gage height is often used interchangeably with the more general term "stage," although gage height is more appropriate when used with a reading on a gage.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of hydrologic data are obtained.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is attributable to the presence of alkaline earths (principally calcium and magnesium) and is expressed as equivalent calcium carbonate ($CaCO_3$).

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substance (MBAS) is a measure of apparent detergents. This determination depends on the formation of a blue color when methylene blue dye reacts with synthetic detergent compounds.

Micrograms per gram (µg/g) is a unit expressing the concentration of a chemical element as the mass (micrograms) of the element sorbed per unit mass (gram) of sediment.

Micrograms per liter (UG/L, µg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represent the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L, and is based on the mass of sediment per liter of water-sediment mixture.

National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

Organism is any living entity, such as an insect, phytoplankter, or zooplankter.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meters (m^2), acres, or hectares. Periphyton benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliters (mL) or liters (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter code numbers are unique five-digit code numbers assigned to each parameter placed into storage. These codes are assigned by the Environmental Protection Agency and are also used to identify data exchanged among agencies.

Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle-size is the diameter, in millimeters (mm), of suspended sediment or bed material determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with recommendations made by the American Geophysical Union Subcommittee on Sediment Terminology.

The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay..........	0.00024 - 0.004	Sedimentation.
Silt..........	.004 - .062	Sedimentation.
Sand..........	.062 - 2.	Sedimentation or sieve.
Gravel........	2.0 - 64.0	Sieve.

The particle-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic material is removed and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass or volume.

Pesticides are chemical compounds used to control undesirable plants and animals. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides. Insecticides and herbicides, which control insects and plants respectively, are the two categories reported.

Picocurie (PC, pCi) is one trillionth (1×10^{12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment, and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells/mL of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algal mats or floating "moss" in lakes. Their concentrations are expressed as number of cells/mL of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column, and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCBs) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [mg $C/(m^2 \cdot time)$ for periphyton and macrophytes and mg $C/(m^3 \cdot time)$ for phytoplankton] are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method, and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [mg $O_2/(m^2 \cdot time)$ for periphyton and macrophytes and mg $O_2/(m^3 \cdot time)$ for phytoplankton] are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of only readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Runoff in inches (IN, in) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L).

Suspended-sediment discharge (tons/day) is the rate at which dry weight of sediment passes a section of a stream or is the quantity of sediment, as measured by dry weight or volume, that passes a section in a given time. It is computed by multiplying discharge time mg/L times 0.0027.

Suspended-sediment load is quantity of suspended sediment passing a section in a specified period.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry weight or volume, that passes a section during a given time.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Solute is any substance derived from the atmosphere, vegetation, soil, or rocks that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in micromhos per centimeter at 25°C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water per unit of time, flowing in a channel.

Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lived.

Natural substrates refers to any naturally occurring emersed or submersed solid surface, such as a rock or tree, upon which an organism lived.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization of organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multi-plate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest U.S.G.S. topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is that part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of the total concentration in a water-sediment mixture. The water-sediment mixture is associated with (or sorbed on) that material retained on a 0.45 micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 µm membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, Hexagenia limbata is the following:

Kingdom.................Animal
Phylum..............Arthropoda
Class...................Insecta
Order............Ephemeroptera
Family..............Ephemeridae
Genus.................Hexageria
Species.......Hexagenia limbata

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration in milligrams per liter by 0.00136.

Tons per day is the quantity of substance in solution or suspension that passes a stream section during a 24-hour day.

Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determines all of the constituent in the sample.)

Total in bottom material is the total amount of a given constituent in a representative sample of bottom material. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total in bottom material."

Total load (tons) is the total quantity of any individual constituent, as measured by dry mass or volume, that is dissolved in a specific amount of water (discharge) during a given time. It is computed by multiplying the total discharge, times the mg/L of the constituent, times the factor 0.0027, times the number of days.

Total, recoverable refers to the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent percent in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Turbidity (NTU) is based on the comparison of the intensity of light scattered by the sample under defined conditions with the intensity of light scattered by a standard reference suspension of Formazin polymer under the same conditions.

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WRD is used as an abbreviation for "Water-Resources Data" in the REVISED RECORDS paragraph to refer to State annual basic-data reports published before 1975.

WSP is used as an abbreviation for "Water-Supply Paper" in references to previously published reports.

DOWNSTREAM ORDER AND STATION NUMBER

Since October 1, 1950, the order of listing hydrologic-station records in Survey reports is in a downstream direction along the main stream. All stations on a tributary entering upstream from a main-stream station are listed before that station. A station on a tributary that enters between two main-stream stations is listed between them. A similar order is followed in listing stations on first rank, second rank, and other ranks of tributaries. The rank of any tributary on which a station is situated with respect to the stream to which it is immediately tributary is indicated by an indention in a list of stations in the front of the report. Each indention represents one rank. This downstream order and system of indention show which stations are on tributaries between any two stations and the rank of the tributary on which each station is situated.

As an added means of identification, each hydrologic station and partial-record station has been assigned a station number. These are in the same downstream order used in this report. In assigning station numbers, no distinction is made between partial-record stations and other stations; therefore, the station number for a partial-record station indicates downstream-order position in a list made up of both types of stations. Gaps are left in the series of numbers to allow for new stations that may be established; hence, the numbers are not consecutive. The complete 8-digit number for each station such as 06442500, which appears just to the left of the station name, includes the 2-digit part number "06" plus the 6-digit downstream order number "442500".

NUMBERING SYSTEM FOR WELLS AND MISCELLANEOUS SITES

The 8-digit downstream order station numbers are not assigned to wells and miscellaneous sites where only random water-quality samples or discharge measurements are taken.

The well and miscellaneous site numbering system of the U.S. Geological Survey is based on the grid system of latitude and longitude. The system provides the geographic location of the well or miscellaneous site and a unique number for each site. The number consists of 15 digits. The first 6 digits denote the degrees, minutes, and seconds of latitude, the next 7 digits denote degrees, minutes, and seconds of longitude, and the last 2 digits (assigned sequentially) identify the wells or other sites within a 1-second grid. See figure 4 below.

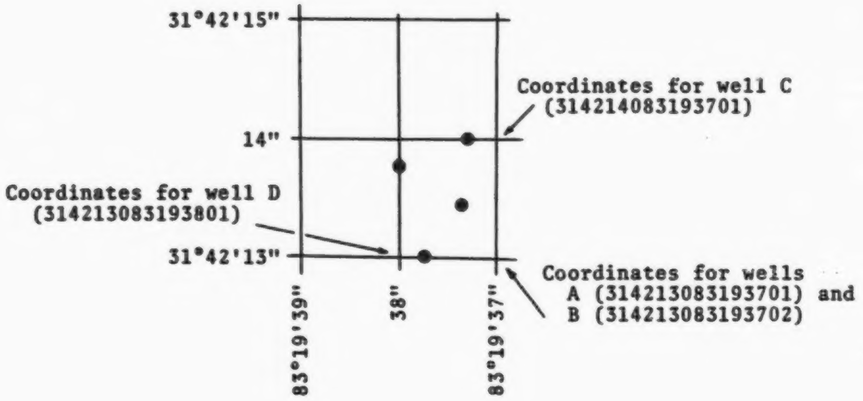


Figure 4. System for numbering wells and miscellaneous sites (latitude and longitude)

SPECIAL NETWORKS AND PROGRAMS

Hydrologic bench-mark station is one that provides hydrologic data for a basin in which the hydrologic regimen will likely be governed solely by natural conditions. Data collected at a bench-mark station may be used to separate effects of natural from manmade changes in other basins which have been developed and in which the physiography, climate, and geology are similar to those in the undeveloped bench-mark basin.

National stream-quality accounting network (NASQAN) is a data collection network designed by the U.S. Geological Survey to meet many of the information demands of agencies or groups involved in national or regional water-quality planning and management. Both accounting and broad-scale monitoring objectives have been incorporated into the network design. Areal configuration of the network is based on river-basin accounting units (identified by 8-digit hydrologic-unit numbers) designated by the Office of Water Data Coordination in consultation with the Water Resources Council. Primary objectives of the network are (1) to depict areal variability of streamflow and water-quality conditions nationwide on a year-by-year basis and (2) to detect and assess long-term changes in streamflow and stream quality.

Pesticide program is a network of regularly sampled water-quality stations where samples are collected to determine the concentration and distribution of pesticides in streams where potential contamination could result from the application of the commonly used insecticides and herbicides. Operation of the network is a Federal interagency activity.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Tritium network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

EXPLANATION OF STAGE AND WATER-DISCHARGE RECORDS

Collection and computation of data

The base data collected at gaging stations consist of records of stage and measurements of discharge of streams or canals, and stage, surface area, and contents of lakes or reservoirs. In addition, observations of factors affecting the stage-discharge relation or the stage-capacity relation, weather records, and other information are used to supplement base data in determining the daily flow or volume of water in storage. Records of stage are obtained from either direct readings on a nonrecording gage or from a water-stage recorder that gives either a continuous graph of the fluctuations or a tape punched at selected time intervals. Measurements of discharge are made with a current meter, using the general methods adopted by the Geological Survey. These methods are described in standard text-books, in Water-Supply Paper 888, and in U.S. Geological Survey Techniques of Water Resources Investigations, book 3, chapter A6.

For stream-gaging stations, rating tables giving the discharge for any stage are prepared from stage-discharge relation curves. If extensions to the rating curves are necessary to express discharge greater than measured, they are made on the basis of indirect measurements of peak discharge (such as slope-area or contracted-opening measurements, computation of flow over dams or weirs), step-backwater techniques, velocity-area studies, and logarithmic plotting. The daily mean discharge is computed from gage heights and rating tables, then the monthly and yearly mean discharge are computed from the daily figures. If the stage-discharge relation is subject to change because of frequent or continual change in the physical features that form the control, the daily mean discharge is computed by the shifting-control method, in which correction factors based on individual discharge measurements and notes by engineers and observers are used in applying the gage heights to the rating tables. If the stage-discharge relation for a station is temporarily changed by the presence of aquatic growth or debris on the control, the daily mean discharge is computed by what is basically the shifting-control method.

At some stream-gaging stations the stage-discharge relation is affected by the backwater from reservoirs, tributary streams, or other sources. This necessitates the use of the slope method in which the slope or fall in a reach of the stream is a factor in computing discharge. The slope or fall is obtained by means of an auxiliary gage set at some distance from the base gage. At some stations the stage-discharge relation is affected by changing stage; at these stations the rate of change in stage is used as a factor in computing discharge.

At some northern stream-gaging stations the stage-discharge relation is affected by ice in the winter, and it becomes impossible to compute the discharge in the usual manner. Discharge for periods of ice effect is computed on the basis of gage-height record and occasional winter discharge measurements. Consideration is given to the available information on temperature and precipitation, notes by gage observers and hydrologists, and comparable records of discharge for other stations in the same or nearby basins.

For a lake or reservoir station, capacity tables giving the contents for any stage are prepared from stage-area relation curves defined by surveys. The application of the stage to the capacity table gives the contents, from which the daily, monthly, or yearly change in contents is computed.

If the stage-capacity curve is subject to changes because of deposition of sediment in the reservoir, periodic resurveys of the reservoir are necessary to define new stage-capacity curves. During the period between reservoir surveys the computed contents may be increasingly in error due to the gradual accumulation of sediment.

For some gaging stations there are periods when no gage-height record is obtained or the recorded gage height is so faulty that it cannot be used to compute daily discharge or contents. This happens when the recorder stops or otherwise fails to operate properly, intakes are plugged, the float is frozen in the well, or for various other reasons. For such periods the daily discharges are estimated on the basis of recorded range in stage, prior and subsequent records, discharge measurements, weather records, and comparison with records for other stations in the same or nearby basins. Likewise daily contents may be estimated on the basis of operator's log, prior and subsequent records, inflow-outflow studies, and other information.

The data in this report generally comprise a description of the station and tabulations of daily and monthly figures. For gaging stations on streams or canals a table showing the daily discharge and monthly and yearly discharge is given. For gaging stations on lakes and reservoirs a monthly summary table of stage and contents or a table showing the daily contents is given. Tables of daily mean gage heights are included for some streamflow stations and for some reservoir stations. Records are published for the water year, which begins on October 1 and ends on September 30.

The description of the gaging station gives the location, drainage area, period of record, notations of revisions of previously published records, type and history of gages, general remarks, average discharge, and extremes of discharge or contents. The location of the gaging station and the drainage area are obtained from most accurate maps available. River mileage, given under "LOCATION" for some stations, is that determined and used by the Corps of Engineers or other agencies. Periods for which there are published records for the present station or for stations generally equivalent to the present one are given under "PERIOD OF RECORD."

Previously published streamflow records of some stations have been found to be in error on the basis of data or information later obtained. Revisions of such records are usually published along with the current records in one of the annual or compilation reports. In order to make it easier to find such revised records, a paragraph headed "REVISED RECORDS" has been added to the description of all stations for which revised records have been published. Listed therein are all the reports in which revisions have been published, each followed by the water years for which figures are revised in that report. In listing the water years only one number is given; for instance, 1965 stands for the water year October 1, 1964, to September 30, 1965. If no daily, monthly, or annual figures of discharge are affected by the revision, the fact is brought out by notations after the year dates as follows: "(M)" means that only the instantaneous maximum discharge was revised; "(m)" that only the instantaneous minimum was revised; and "(P)" that only peak discharges were revised. If the drainage area has been revised, the report in which the revised figure was first published is given. It should be noted that for all stations for which cubic feet per second per square mile and runoff in inches are published, a revision of the drainage area necessitates corresponding revision of all figures based on the drainage area. Revised figures of cubic feet per second per square mile and runoff in inches resulting from a revision of the drainage area only are usually not published in the annual series of reports.

The type of gage currently in use; the datum of the present gage referred to National Geodetic Vertical Datum; and a condensed history of the types, locations, and datums of previous gages used during the period of record are given under "GAGE." National Geodetic Vertical Datum is explained in "DEFINITION OF TERMS" on page 10.

Information pertaining to the accuracy of the discharge records and to conditions which affect the natural flow of the gaging station is given under "REMARKS." For reservoir stations information on the dam forming the reservoir, the capacity, outlet works and spillway, and purpose and use of the reservoir is given under "REMARKS."

The average discharge for the number of years indicated is given under "AVERAGE DISCHARGE"; it is not given for stations having fewer than 5 complete years of record or for stations where changes in water development during the period of record cause the figure to have little significance. In addition, the median of yearly mean discharges is given for stream-gaging stations having 10 or more complete years of record if the median differs from the average by more than 10 percent. Under "EXTREMES" are given first, the extremes for the period of record, second, information available outside the period of record, and last, those for the current year. Unless otherwise qualified, the maximum discharge (or contents) is the instantaneous maximum corresponding to the crest stage obtained by use of a water-stage recorder (graphic or digital), a crest-stage gage, or a nonrecording gage read at the time of the crest. If the maximum gage height did not occur on the same day as the maximum discharge (or contents), it is given separately. Similarly, the minimum is the instantaneous minimum unless otherwise qualified. For some stations peak discharges are listed with EXTREMES FOR THE CURRENT YEAR; if they are, all independent peaks, including the maximum for the year, above the selected base with the time of occurrence and corresponding gage heights are published in tabular format. The base discharge, which is given in the table heading, is selected so that an average of about three peaks a year will be presented. Peak discharges are not published for any canals, ditches, drains, or for any stream for which the peaks are subject to substantial control by man. Time of day is expressed in 24-hour local standard time; for example, 12:30 a.m. is 0030, 1:30 p.m. is 1330. The minimums for these stations are published in a separate paragraph following the table of peaks.

Skeleton rating tables are published, immediately following EXTREMES, for stream-gaging stations where they serve a useful purpose and the dates of applicability can be easily identified.

The daily table for stream-gaging stations gives the mean discharge for each day and is followed by monthly and yearly summaries. In the monthly summary below the daily table, the line headed "TOTAL" gives the sum of the daily figures. The line headed "MEAN" gives the average flow in cubic feet per second during the month. The lines headed "MAX" and "MIN" give the maximum and minimum daily discharges, respectively, for the month. Discharge for the month also may be expressed in cubic feet per second per square mile (line headed "CFSM"), or in inches (line headed "IN"), or in acre-feet (line headed "AC-FT"). Figures for cubic feet per second per square mile and runoff in inches are omitted if there is extensive regulation or diversion, if the drainage area includes large noncontributing areas, or if the average annual rainfall over the drainage basin is usually less than 20 inches. In the yearly summary below the monthly summary, the figures shown are the appropriate daily discharges for the calendar and water years.

Footnotes to the table of daily discharge are introduced by the word "NOTE." Footnotes are used to indicate periods for which the discharge is computed or estimated by special methods because of no gage-height record, backwater from various sources, or other unusual conditions. Periods of no gage-height record are indicated if the period is continuous for a month or more or includes the maximum discharge for the year. Periods of backwater from an unusual source, of indefinite stage-discharge relation, or of any other unusual condition at the gage site are indicated only if they are a month or more in length and the accuracy of the records is affected. Days on which the stage-discharge relation is affected by ice are not indicated. The methods used in computing discharge for various unusual conditions have been explained in preceding paragraphs.

For most gaging stations on lakes and reservoirs the data presented comprise a description of the station and a monthly summary table of stage and contents. For some reservoirs a table showing daily contents or stage is given. A skeleton table of capacity at given stages is published for all reservoirs for which records are published on a daily basis, but is not published for reservoirs for which only monthly data are given.

Accuracy of field data and computed results

The accuracy of streamflow data depends primarily on (1) the stability of the stage-discharge relation or, if the control is unstable, the frequency of discharge measurements, and (2) the accuracy of observations of stage, measurements of discharge, and interpretations of records.

The station description under "REMARKS" states the degree of accuracy of the records. "Excellent" means that about 95 percent of the daily discharges are within 5 percent; "good", within 10 percent; and "fair" within 15 percent. "Poor" means that daily discharges have less than "fair" accuracy.

Figures of daily mean discharge in this report are shown to the nearest hundredth of a cubic foot per second for discharges of less than 1 ft^3/s; to tenths between 1.0 and 10 ft^3/s; to whole numbers between 10 and 1,000 ft^3/s; and to 3 significant figures above 1,000 ft^3/s. The number of significant figures used is based solely on the magnitude of the figure. The same rounding rules apply to discharge figures listed for partial-record stations.

Discharge at many stations, as indicated by the monthly mean, may not reflect natural runoff due to the effects of diversion, consumption, regulation by storage, increase or decrease in evaporation due to artificial causes, or to other factors. For such stations, figures of cubic feet per second per square mile and of runoff in inches are not published unless satisfactory adjustments can be made for diversions, for changes in contents of reservoirs, or for other changes incident to use and control. Evaporation from a reservoir is not included in the adjustments for changes in reservoir contents, unless it is so stated. Even at those stations where adjustments are made, large errors in computed runoff may occur if adjustments or losses are large in comparison with the observed discharge.

Other data available

Information of a more detailed nature than that published for most of the gaging stations such as observations of water temperatures, discharge measurements, gage-height records, and rating tables is on file in the district office. Also most gaging-station records are available in computer-usable form and many statistical analyses have been made.

Information on the availability of unpublished data or statistical analyses may be obtained from the district office.

Records of discharge collected by agencies other than the Geological Survey

The National Water Data Exchange, Water Resources Division, U.S. Geological Survey, National Center, Reston, Va. 22092, maintains an index of all discharge measurement sites in the State. Information on records available at specific sites can be obtained upon request.

EXPLANATION OF WATER-QUALITY RECORDS

Collection and examination of data

Surface water samples for analyses usually are collected at or near gaging stations. The quality-of-water records are given immediately following the discharge records at these stations.

The descriptive heading for water-quality records gives the period of record for all water-quality data; the period of daily record for parameters that are measured on a daily basis (specific conductance, pH, dissolved oxygen, water temperature, sediment discharge, etc.); extremes for the period of daily record; extremes for the current year; and general remarks.

For ground-water records, no descriptive statements are given; however, the well number, depth of well, date of sampling and/or other pertinent data are given in the table containing the chemical analyses of the ground water.

Water analysis

Most methods for collecting and analyzing water samples are described in the U.S. Geological Survey Techniques of Water-Resources Investigations listed on a following page.

One sample can define adequately the water quality at a given time if the mixture of solutes throughout the stream cross section is homogeneous. However, the concentration of solutes at different locations in the cross section may vary widely with different rates of water discharge, depending on the source of material and the turbulence and mixing of the stream. Some streams must be sampled through several vertical sections to obtain a representative sample needed for an accurate mean concentration and for use in calculating load.

Chemical-quality data published in this report are considered to be the most representative values available for the stations listed. The values reported represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. In the rare case where an apparent inconsistency exists between a reported pH value and the relative abundance of carbon dioxide species (carbonate and bicarbonate), the inconsistency is the result of a slight uptake of carbon dioxide from the air by the sample between measurement of pH in the field and determination of carbonate and bicarbonate in the laboratory.

For chemical-quality stations equipped with digital monitors, the records consist of daily maximum, minimum, and mean values for each constituent measured and are based upon hourly punches beginning at 0100 hours and ending at 2400 hours for the day of record. More detailed records (hourly values) may be obtained from the district office.

Water temperature

Water temperatures are measured at most of the water-quality stations. In addition, water temperatures are taken at time of discharge measurements for water-discharge stations. For stations where water temperatures are taken manually once or twice daily, the water temperatures are taken at about the same time each day. Large streams have a small daily temperature change; shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. Some streams may be affected by waste-heat discharges.

At stations where recording instruments are used, either mean temperatures or maximum and minimum temperatures for each day are published.

Sediment

Suspended-sediment concentrations are determined from samples collected by using depth-integrating samplers. Samples usually are obtained at several verticals in the cross section, or a single sample may be obtained at a fixed point and a coefficient applied to determine the mean concentration in the cross sections.

During periods of rapidly changing flow or rapidly changing concentration, samples may have been collected more frequently (twice daily or, in some instances, hourly). The published sediment discharges for days of rapidly changing flow or concentration were computed by the subdivided day method (time-discharge weighted average). Therefore, for those days when the published sediment discharge value differs from the value computed as the product of discharge times mean concentration times 0.0027, the reader can assume that the sediment discharge for that day was computed by the subdivided day method. For periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately before and after the periods, and suspended-sediment loads for other periods of similar discharge.

At other stations, suspended-sediment samples were collected periodically at many verticals in the stream cross section. Although data collected periodically may represent conditions only at the time of observations, such data are useful in establishing seasonal relations between quality and streamflow in predicting long-term sediment-discharge characteristics of the stream.

In addition to the records of the quantities of suspended sediment, records of the periodic measurements of the particle-size distribution of the suspended sediment and bed material are included.

EXPLANATION OF GROUND-WATER LEVEL RECORDS

Collection of the data

Only ground-water level data from a basic network of observation wells are published herein. This basic network contains observation wells so located that the most significant data are obtained from the fewest wells in the most important aquifers.

Each well is identified by means of a 15-digit number that is based on latitude and longitude. See Figure 4.

Measurements are made in many types of wells, under varying conditions of access and at different temperatures, hence, neither the method of measurement nor the equipment can be standardized. At each observation well, however, the equipment and techniques used are those that will ensure that measurements at each well are consistent.

Water-level measurements in this report are given in feet with reference to either National Geodetic Vertical Datum of 1929 or land-surface datum (lsd). National Geodetic Vertical Datum of 1929 is explained in the Definition of Terms paragraph. Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the altitude of the land-surface datum above National Geodetic Vertical Datum of 1929 is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error in determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given only to a tenth of a foot or a larger unit.

PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

Thirty-four manuals by the U.S. Geological Survey have been published to date in the series on techniques describing procedures for planning and executing specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) is on surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises. The reports listed below are for sale by the U.S. Geological Survey, Branch of Distribution, 1200 South Eads Street, Arlington, VA 22202 (authorized agent of the Superintendent of Documents, Government Printing Office).

NOTE: When ordering any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations".

1-D1. *Water temperature--influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J. F. Ficke, and G. F. Smoot: USGS--TWRI Book 1, Chapter D1. 1975. 65 pages.

1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W. W. Wood: USGS--TWRI Book 1, Chapter D2. 1976. 24 pages.

2-D1. *Application of surface geophysics to ground-water investigations*, by A. A. R. Zohdy, G. P. Eaton, and D. R. Mabey: USGS--TWRI Book 2, Chapter D1. 1974. 116 pages.

2-E1. *Application of borehole geophysics to water-resources investigations*, by W. S. Keys and L. M. MacCary: USGS--TWRI Book 2, Chapter E1. 1971. 126 pages.

3-A1. *General field and office procedures for indirect discharge measurements*, by M. A. Benson and Tate Dalrymple: USGS--TWRI Book 3, Chapter A1. 1967. 30 pages.

3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M. A. Benson: USGS--TWRI Book 3, Chapter A2. 1967. 12 pages.

3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G. L. Bodhaine: USGS--TWRI Book 3, Chapter A3. 1968. 60 pages.

3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H. F. Matthai: USGS--TWRI Book 3, Chapter A4. 1967. 44 pages.

3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS--TWRI Book 3, Chapter A5. 1967. 29 pages.

3-A6. *General procedure for gaging streams*, by R. W. Carter and Jacob Davidian: USGS--TWRI Book 3, Chapter A6. 1968. 13 pages.

3-A7. *Stage measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A7. 1968. 28 pages.

3-A8. *Discharge measurements at gaging stations*, by T. J. Buchanan and W. P. Somers: USGS--TWRI Book 3, Chapter A8. 1969. 65 pages.

3-A11. *Measurement of discharge by moving-boat method*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 3, Chapter A11. 1969. 22 pages.

3-B1. *Aquifer-test design, observation, and data analysis*, by R. W. Stallman: USGS--TWRI Book 3, Chapter B1. 1971. 26 pages.

3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G. D. Bennett: USGS--TWRI Book 3, Chapter B2. 1976. 172 pages.

3-C1. *Fluvial sediment concepts*, by H. P. Guy: USGS--TWRI Book 3, Chapter C1. 1970. 55 pages.

3-C2. *Field methods for measurement of fluvial sediment*, by H. P. Guy and V. W. Norman: USGS--TWRI Book 3, Chapter C2. 1970. 59 pages.

3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS--TWRI Book 3, Chapter C3. 1972. 66 pages.

4-A1. *Some statistical tools in hydrology*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A1. 1968. 39 pages.

4-A2. *Frequency curves*, by H. C. Riggs: USGS--TWRI Book 4, Chapter A2. 1968. 15 pages.

4-B1. *Low-flow investigations*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B1. 1972. 18 pages.

4-B2. *Storage analyses for water supply*, by H. C. Riggs and C. H. Hardison: USGS--TWRI Book 4, Chapter B2. 1973. 20 pages.

4-B3. *Regional analyses of streamflow characteristics*, by H. C. Riggs: USGS--TWRI Book 4, Chapter B3. 1973. 15 pages.

4-D1. *Computation of rate and volume of stream depletion by wells*, by C. T. Jenkins: USGS--TWRI Book 4, Chapter D1. 1970. 17 pages.

5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M. W. Skougstad and others, editors: USGS--TWRI Book 5, Chapter A1. 1979. 626 pages.

5-A2. *Determination of minor elements in water by emission spectroscopy*, by P. R. Barnett and E. C. Mallory, Jr.: USGS--TWRI Book 5, Chapter A2. 1971. 31 pages.

5-A3. *Methods for analysis of organic substances in water*, by D. F. Goerlitz and Eugene Brown: USGS--TWRI Book 5, Chapter A3. 1972. 40 pages.

5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, edited by P. E. Greeson, T. A. Ehlke, G. A. Irwin, B. W. Lium, and K. V. Slack: USGS--TWRI Book 5, Chapter A4. 1977. 332 pages.

5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L. L. Thatcher, V. J. Janzer, and K. W. Edwards: USGS--TWRI Book 5, Chapter A5. 1977. 95 pages.

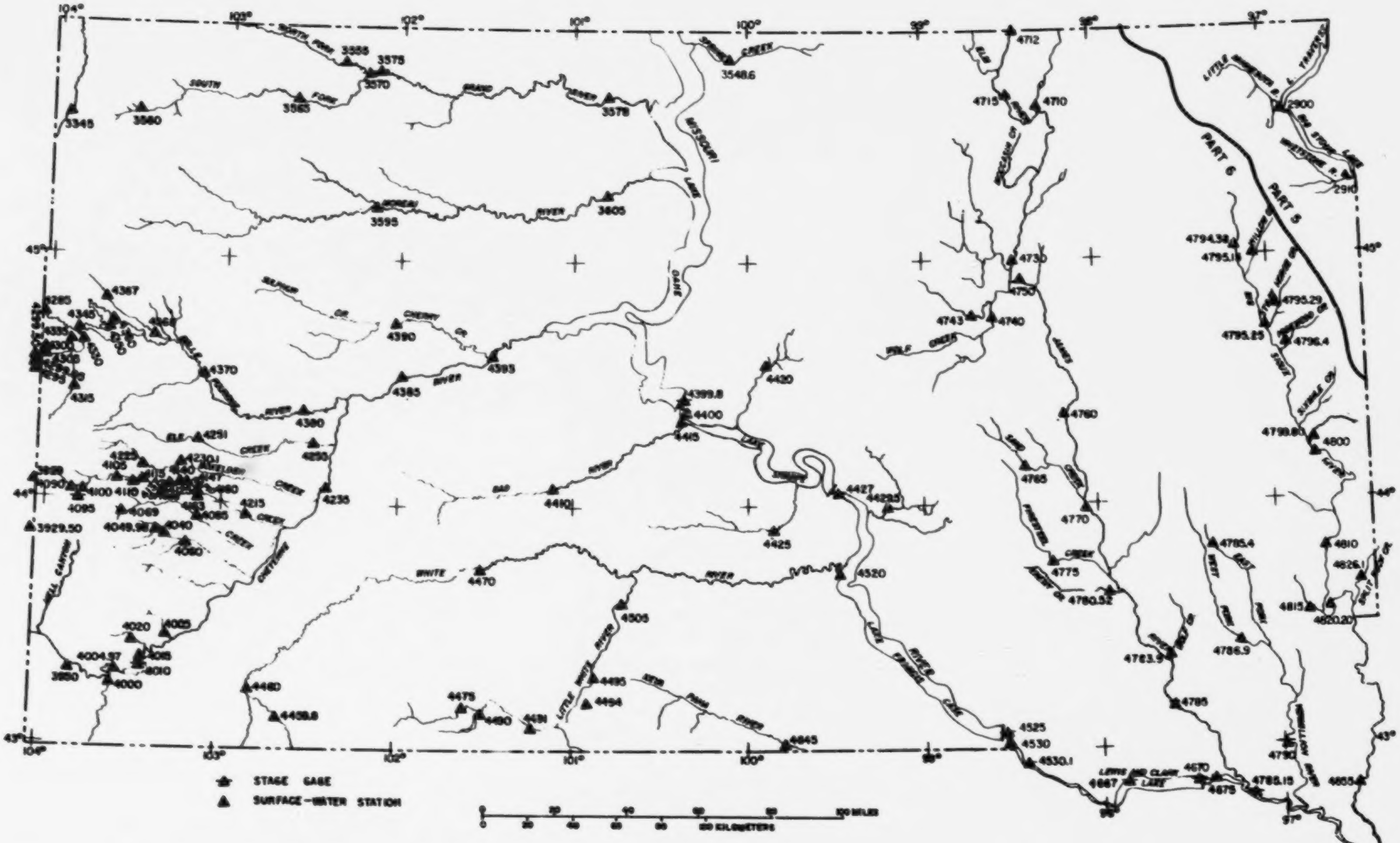
5-C1. *Laboratory theory and methods for sediment analysis*, by H. P. Guy: USGS--TWRI Book 5, Chapter C1. 1969. 58 pages.

7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P. C. Trescott, G. F. Pinder, and S. P. Larson: USGS--TWRI Book 7, Chapter C1. 1976. 116 pages.

7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L. F. Konikow and J. D. Bredehoeft: USGS--TWRI Book 7, Chapter C2. 1978. 90 pages.

8-A1. *Methods of measuring water levels in deep wells*, by M. S. Garber and F. C. Koopman: USGS--TWRI Book 8, Chapter A1. 1968. 23 pages.

8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G. F. Smoot and C. E. Novak: USGS--TWRI Book 8, Chapter B2. 1968. 15 pages.


104°
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101°
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3548.6
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4712
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PART 6
PART 5
MISSOURI
LAKE
OAHE
4367
4370
4380
4385
4390
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4399.8
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4215
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4799.80
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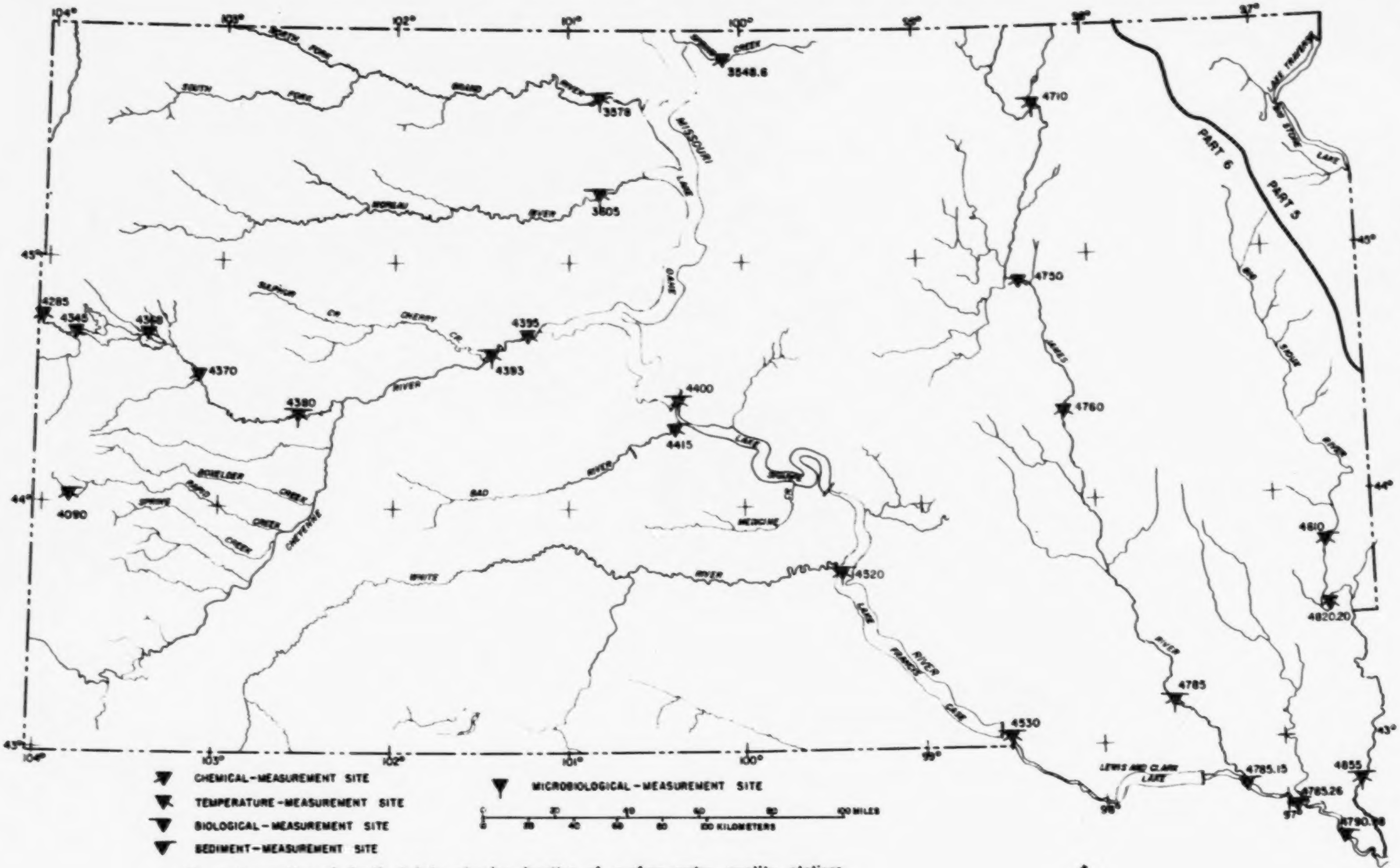
4785.15
4805
4667
4670
4675
SOUTH FORK
GRAND
RIVER
MOREAU
RIVER
CHERRY CR
RIVER
ELK CREEK
BAD RIVER
WHITE RIVER
LITTLE WHITE RIVER
KEYA PAHA RIVER
LAKE FRANCIS CASE
LEWIS AND CLARK LAKE
JAMES
WOLF CREEK
LITTLE MINNESOTA R.
L. TRAVERSE
WHETSTONE R.
BIG STONE LAKE
BIG SIOUX RIVER
VERMILLION RIVER
WEST FORK
EAST FORK
HELL CANYON
CHEYENNE
STAGE GAGE
SURFACE-WATER STATION
0 20 40 60 80 100 MILES
0 20 40 60 80 100 KILOMETERS

Figure 5. --Map of South Dakota showing location of lake and stream gaging stations

21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NORTH FORK
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SPRING CREEK
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3579
MISSOURI
LAKE
OAHE
MOREAU
RIVER
3805
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LAKE TRAVERSE
BIG STONE LAKE
PART 6
PART 5
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BIG
SIOUX
RIVER
JAMES
4760
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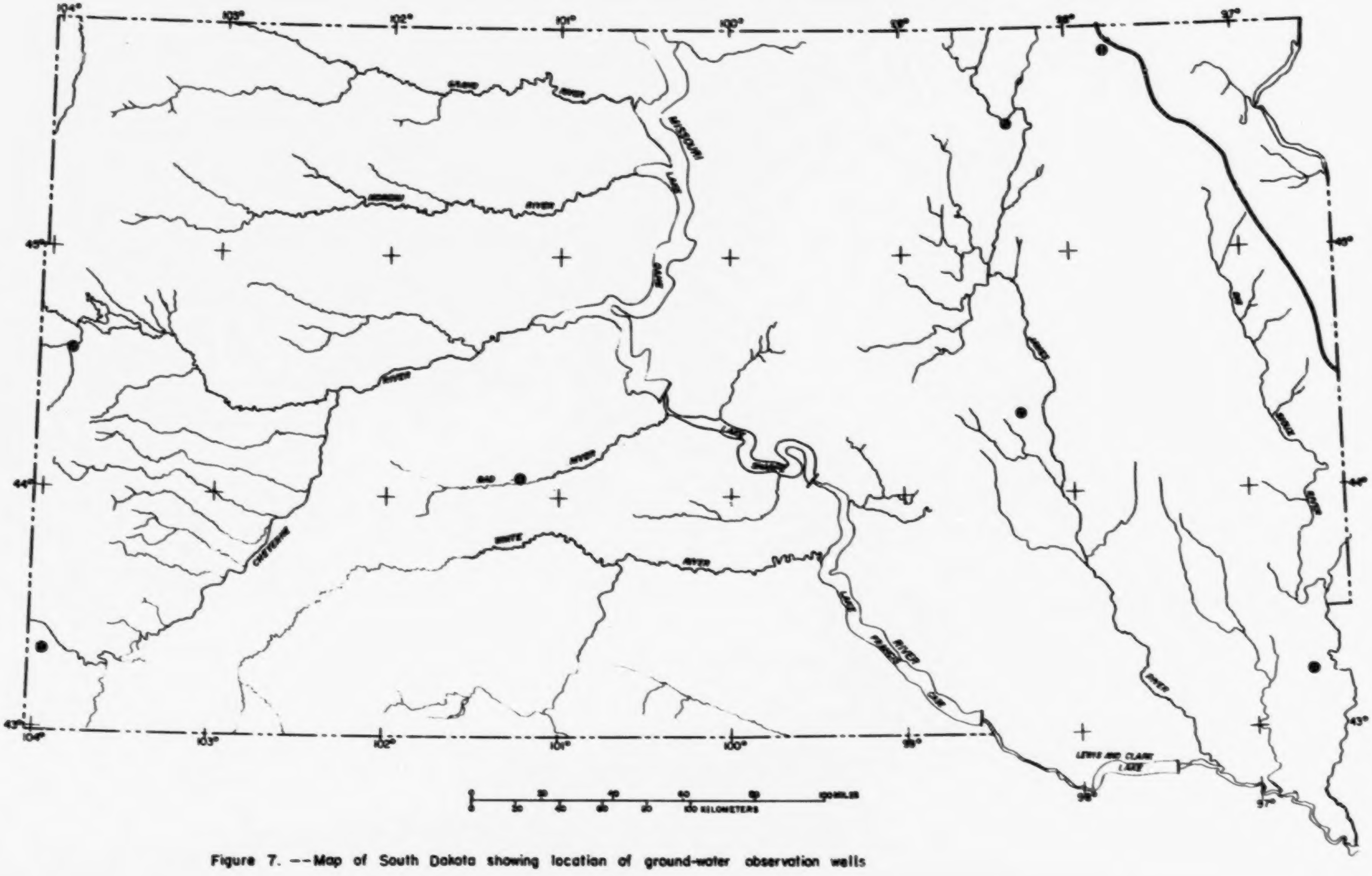
4348
SULPHUR CR
CHERRY CR
4395
4393
4370
RIVER
4380
4400
4415
LAKE
SHARPE
BAD
RIVER
4090
BOXELDER
RAPID
SPRING
CREEK
CHEYENNE
MEDICINE
WHITE
RIVER
4520
4810
4820.20
LAKE
FRANCIS
CASE
RIVER
4530
4785
LEWIS AND CLARK
LAKE
4785.15
4785.26
4855
4790.98
CHEMICAL-MEASUREMENT SITE
TEMPERATURE-MEASUREMENT SITE
BIOLOGICAL-MEASUREMENT SITE
SEDIMENT-MEASUREMENT SITE
MICROBIOLOGICAL-MEASUREMENT SITE
0 20 40 60 80 100 MILES
0 20 40 60 80 100 KILOMETERS

Figure 6.-- Map of South Dakota showing location of surface-water quality stations


104°
103°
102°
101°
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43°
GRAND RIVER
MOREAU RIVER
MISSOURI
LAKE
OAHE
CHEYENNE
RIVER
BAD RIVER
LAKE
SHARPE
WHITE
RIVER
LAKE
FRANCIS
CASE
RIVER
LEWIS AND CLARK
LAKE
JAMES
RIVER
BIG
SIOUX
RIVER
0 20 40 60 80 100 MILES
0 20 40 60 80 100 KILOMETERS

Figure 7. --Map of South Dakota showing location of ground-water observation wells

06334500 LITTLE MISSOURI RIVER AT CAMP CROOK, SD

LOCATION.--Lat 45°32'49", long 103°58'23", in SW¼ sec.2, T.18 N., R.1 E., Harding County, Hydrologic Unit 10110201, on left bank 15 ft (5 m) upstream from bridge on State Highway 20 at east edge of Camp Crook.

DRAINAGE AREA.--1,970 mi² (5,100 km²), approximately.

PERIOD OF RECORD.--September 1903 to November 1906, May 1956 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1904. WSP 1729: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 3,108.98 ft (947.617 m) National Geodetic Vertical Datum of 1929. Sept. 2, 1903, to Nov. 30, 1906, nonrecording gage at site 0.5 mi (0.8 km) upstream at different datum. May 1956 to Oct. 8, 1957, nonrecording gage at site 15 ft (5 m) downstream, and Oct. 9, 1957, to Sept. 30, 1976, water-stage recorder at present site both at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods and for period of no gage-height record, which are poor. Small diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--28 years, 135 ft³/s (3.823 m³/s), 97,810 acre-ft/yr (121 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,420 ft³/s (267 m³/s) Mar. 24, 1978, gage height, 16.90 ft (5.151 m), present datum; no flow at times.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1952 reached a stage of about 18 ft (5.5 m), present datum, from local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 692 ft³/s (19.6 m³/s) at 0930 hours, July 28, gage height, 5.88 ft (1.792 m), no peak above base of 1,000 ft³/s (28.3 m³/s); no flow Apr. 17-19.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.85	3.8	3.7	5.5	7.0	26	3.5	1.5	1.8	60	226	5.6
2	1.0	4.0	4.0	5.5	7.0	19	2.7	1.3	1.8	34	125	4.1
3	1.1	3.6	4.4	5.5	7.0	18	3.8	1.5	3.1	20	265	3.0
4	1.1	3.6	4.8	6.0	7.5	20	3.1	1.1	5.1	13	175	2.5
5	.80	3.8	4.8	6.0	8.0	19	2.9	1.1	13	6.0	62	2.9
6	.90	3.8	4.6	6.0	7.5	18	2.6	1.0	5.8	3.0	80	3.4
7	.87	3.8	4.6	6.0	7.0	15	2.6	.78	4.3	1.6	40	3.6
8	1.1	3.8	4.6	6.0	7.0	14	2.6	1.4	3.6	1.0	30	3.8
9	1.0	3.8	5.0	6.0	6.6	12	2.3	1.4	2.9	3.8	20	3.0
10	1.1	3.8	5.0	6.0	6.2	11	2.3	1.4	2.8	3.5	35	2.6
11	.53	3.8	5.0	6.4	7.0	11	3.2	1.5	7.8	5.1	18	2.6
12	.81	3.8	5.5	6.8	8.0	11	2.9	1.7	14	6.8	17	2.6
13	.80	3.8	6.0	6.8	8.8	10	2.0	10	15	8.5	16	2.6
14	.91	3.8	6.0	6.6	11	7.6	1.9	3.8	36	9.0	20	2.6
15	2.9	3.8	6.0	6.4	13	6.8	2.0	2.5	16	7.8	19	2.7
16	38	4.1	6.3	6.0	15	6.8	.32	2.3	227	4.3	15	2.8
17	14	4.0	6.0	6.0	20	5.5	.00	2.3	185	3.4	13	2.9
18	19	4.1	5.5	6.0	20	5.4	.00	2.2	138	179	12	2.3
19	82	4.3	5.0	6.4	18	5.4	.00	1.7	108	380	10	1.7
20	40	4.2	5.0	7.0	18	5.1	.01	1.5	85	303	9.0	1.8
21	23	4.5	5.5	7.0	17	4.7	.61	1.1	79	233	8.0	1.4
22	39	4.7	5.5	7.0	20	4.7	2.0	1.8	75	164	7.0	1.4
23	41	4.1	5.0	7.0	50	4.7	2.0	2.7	67	120	6.4	1.5
24	29	4.1	4.5	7.0	46	4.7	1.8	5.9	63	116	6.0	1.8
25	21	4.1	5.0	7.0	30	4.7	2.3	3.9	56	92	5.6	2.7
26	15	4.1	5.5	6.5	28	4.6	2.4	2.8	53	82	5.2	3.1
27	11	3.9	6.0	6.0	23	4.7	2.0	3.2	50	211	5.2	2.7
28	8.1	4.1	6.0	6.0	22	4.4	1.8	1.8	68	614	4.6	2.3
29	5.9	4.2	6.0	6.0	---	4.4	1.7	1.8	94	356	6.0	1.5
30	5.1	4.0	6.0	6.4	---	4.1	1.7	1.7	96	253	7.0	1.4
31	4.4	---	5.5	7.0	---	4.0	---	1.7	---	202	6.2	---
TOTAL	411.27	119.3	162.3	195.8	445.6	296.3	59.04	70.38	1577.0	3495.8	1274.2	78.9
MEAN	13.3	3.98	5.24	6.32	15.9	9.56	1.97	2.27	52.6	113	41.1	2.63
MAX	82	4.7	6.3	7.0	50	26	3.8	10	227	614	265	5.6
MIN	.53	3.6	3.7	5.5	6.2	4.0	.00	.78	1.8	1.0	4.6	1.4
AC-FT	816	237	322	388	884	588	117	140	3130	6930	2530	156

CAL YR 1980 TOTAL 2110.08 MEAN 5.77 MAX 82 MIN .00 AC-FT 4190
WTR YR 1981 TOTAL 8185.89 MEAN 22.4 MAX 614 MIN .00 AC-FT 16240

06354860 SPRING CREEK NEAR HERREID, SD

LOCATION.--Lat 45°58'52", long 100°06'28", in SW¼ sec.13, T.127 N., R.77 W., Campbell County, Hydrologic Unit 10130102, on left bank 0.5 mi (0.8 km) upstream from county highway bridge, 2.4 mi (3.9 km) southwest of Herreid and 13.2 mi (21.2 km) upstream from high-water line of Lake Oahe.

DRAINAGE AREA.--440 mi² (1,140 km²), approximately, of which about 220 mi² (570 km²) is probabably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1962 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,653.80 ft (504.078 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. One observation of water temperature and specific conductance was made during the year.

AVERAGE DISCHARGE.--19 years, 8.73 ft³/s (0.247 m³/s) 6,320 acre-ft/yr (7.79 hm³/yr); median of yearly mean discharges, 3.3 ft³/s (0.09 m³/s), 2,400 acre-ft/yr (3.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,340 ft³/s (37.9 m³/s) Mar. 26, 1978, gage height, 11.49 ft (3.502 m); maximum gage height, 11.60 ft (3.536 m) Mar. 17, 1966; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 273 ft³/s (7.73 m³/s) at 1045 hours, July 15, gage height, 7.69 ft (2.344 m), no other peak above base of 40 ft³/s (1.13 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.80	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.86	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.6	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.98	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.65	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.38	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.22	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	227	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	177	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	93	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	52	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	47	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	60	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	29	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	15	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	13	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.0	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.2	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.3	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.9	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.5	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	1.9	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	1.4	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	1.1	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	742.30	10.54	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	23.9	.34	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	227	1.6	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	1470	21	.00

CAL YR 1980 TOTAL 1.40 MEAN .004 MAX .38 MIN .00 AC-FT 2.8
WTR YR 1981 TOTAL 752.84 MEAN 2.06 MAX 227 MIN .00 AC-FT 1490

06354860 SPRING CREEK NEAR HERREID, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--April to September 1978, October 1979 to September 1981.

WATER QUALITY DATA, WATER YEAR OCTOBRR 1980 TO SEPTEMBER 1981

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          INITIAL DATE                              81/07/20
          INITIAL TIME-DEPTH-BOTTOM                 1530 0000
   00010  WATER        TEMP         CENT            26.7
   00011  WATER        TEMP         FAHN            80.1
   00061  STREAM       FLOW,     INST-CFS             61
   00094 CNDUCTVY    FIELD       MICROMHO            256
   00299   DO          PROBE        MG/L             1.2
   00301   DO          SATUR      PERCENT           14.8
   00400   PH                         SU            7.00
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Analyses by Corps of Engineers.
Tables from STORET.

06355500 NORTH FORK GRAND RIVER NEAR WHITE BUTTE, SD

LOCATION.--Lat 45°47'39", long 102°21'59", in NE¼SE¼ sec.10, T.21 N., R.14 E., Perkins County, Hydrologic Unit 10130301, on right bank 1,400 ft (430 m) upstream from highway bridge and 9.8 mi (15.8 km) south of White Butte.

DRAINAGE AREA.--1,190 mi² (3,080 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1947, 1950.

GAGE.--Water-stage recorder. Altitude of gage is 2,275 ft (693 m), by barometer. See WSP 1917 for history of changes prior to June 12, 1951. June 12, 1951, to Aug. 20, 1975, water-stage recorder, and Aug. 21 to Sept. 10, 1975, nonrecording gage at site 1,300 ft (400 m) downstream; Sept. 11, 1975, to Mar. 22, 1976, nonrecording gage at present site, and Mar. 23 to July 28, 1976, nonrecording gage at site 1,400 ft (430 m) downstream, all at present datum.

REMARKS.--Records good except those for winter periods and those for periods of no gage-height record, which are poor. Flow regulated by Bowman-Haley Reservoir, capacity, 93,000 acre-ft (115 hm³), 71 mi (114 km) upstream, beginning August 1966. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 54.5 ft³/s (1.543 m³/s), 39,490 acre-ft/yr (48.7 hm³/yr); median of yearly mean discharges, 32 ft³/s (0.91 m³/s), 23,200 acre-ft/yr (29 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,900 ft³/s (875 m³/s) Apr. 16, 1950, gage height, 20.0 ft (6.10 m), from floodmarks, from rating curve extended above 19,000 ft³/s (538 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 148 ft³/s (4.19 m³/s) at 1400 hours, July 14, gage height, 3.32 ft (1.012 m); maximum gage height, 6.32 ft (1.926 m) Dec. 7 (backwater from ice); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-11, Mar. 18 to July 13; stage-discharge relation affected by ice Nov. 28 to Jan. 30, Feb. 16-23)

1.6	0	2.0	1.8	2.5	29
1.7	.17	2.1	3.1	3.0	87
1.8	.50	2.2	7.0	3.5	169
1.9	1.0	2.3	13		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	2.8	2.3	4.2	.14	4.5	.10	.03	.00	.02	.74	.42
2	.00	3.0	2.2	4.0	.14	4.7	.05	.03	.00	.01	.84	.42
3	.00	2.8	2.3	4.0	.14	5.0	.03	.06	.00	.00	1.6	.38
4	.00	2.7	2.4	4.0	.14	5.0	.01	.06	.00	.00	1.6	.38
5	.00	2.7	2.3	4.3	.10	4.8	.00	.04	.00	.00	14	.32
6	.00	2.6	2.2	4.5	.03	4.7	.00	.02	.00	.00	18	.32
7	.00	2.6	2.2	4.4	.03	4.8	.00	.00	.00	.00	11	.29
8	.00	2.7	2.3	4.3	.03	5.0	.00	.00	.00	.00	3.5	.29
9	.00	2.6	2.2	3.9	.03	5.0	.00	.00	.00	.00	2.7	.26
10	.00	2.4	2.2	3.9	.03	5.0	.00	.00	.00	.00	1.8	.23
11	.00	2.6	2.8	4.0	.03	5.0	.00	.00	.00	.00	1.6	.20
12	.00	2.7	2.9	4.1	.03	5.0	.00	.00	.01	.46	1.6	.20
13	.00	2.6	2.8	4.0	.03	4.8	.00	.06	.03	52	1.6	.17
14	.00	2.7	2.6	3.7	1.3	4.5	.00	.10	.06	134	1.2	.17
15	.00	2.7	2.7	3.5	4.3	4.5	.00	.03	.10	93	.96	.12
16	.00	2.7	2.7	3.5	5.5	4.3	.00	.00	.04	54	.90	.12
17	.00	2.7	2.6	3.6	6.0	4.3	.00	.00	.04	35	.79	.10
18	.00	2.8	2.4	3.7	5.5	4.0	.00	.00	.06	20	.74	.10
19	.00	2.8	2.0	3.7	5.0	4.0	.00	.06	.10	13	.65	.08
20	.00	3.0	2.0	4.0	5.0	3.5	.00	.04	.06	8.8	.55	.06
21	1.9	2.8	2.1	4.0	5.5	3.0	.00	.08	.14	5.4	.60	.04
22	3.1	3.0	2.2	4.5	5.0	2.5	.00	.10	.08	2.6	1.5	.04
23	3.1	3.0	2.0	4.2	4.5	2.0	.00	.10	.04	1.8	1.3	.03
24	3.0	3.0	1.8	4.0	4.3	1.5	.00	.08	.01	3.5	1.0	.03
25	2.8	3.1	2.0	3.5	4.3	1.0	.00	.10	.00	2.1	.80	.01
26	2.7	3.1	2.5	2.0	4.5	.80	.00	.10	.00	1.3	.70	.01
27	2.5	3.1	4.0	1.5	4.3	.70	.00	.29	.02	1.1	.64	.00
28	2.4	3.1	5.0	1.0	4.3	.50	.00	.42	.10	.84	.54	.00
29	2.5	3.0	5.0	.70	---	.40	.00	.29	.04	.96	.54	.00
30	2.4	2.5	4.8	.50	---	.30	.02	.10	.02	1.0	.50	.00
31	2.7	---	4.5	.17	---	.20	---	.02	---	.90	.46	---
TOTAL	29.10	83.9	84.0	105.37	70.20	105.30	.21	2.21	.95	431.79	74.95	4.79
MEAN	.94	2.80	2.71	3.40	2.51	3.40	.007	.071	.032	13.9	2.42	.16
MAX	3.1	3.1	5.0	4.5	6.0	5.0	.10	.42	.14	134	18	.42
MIN	.00	2.4	1.8	.17	.03	.20	.00	.00	.00	.00	.46	.00
AC-FT	58	166	167	209	139	209	.4	4.4	1.9	856	149	9.5

CAL YR 1980 TOTAL 1104.82 MEAN 3.02 MAX 28 MIN .00 AC-FT 2190
WTR YR 1981 TOTAL 992.77 MEAN 2.72 MAX 134 MIN .00 AC-FT 1970

06356000 SOUTH FORK GRAND RIVER AT BUFFALO, SD

LOCATION.--Lat 45°34'34", long 103°32'38", in SW¼ sec.29, T.19 N., R.5 E., Harding County, Hydrologic Unit 10130302, on right bank at downstream side of bridge on U.S. Highway 85, 0.3 mi (0.5 km) south of Buffalo.

DRAINAGE AREA.--148 mi² (383 km²).

PERIOD OF RECORD.--August 1955 to current year.

REVISED RECORDS.--WSP 1917: 1956-57. WRD SD-76-1: 1974(M), 1975.

GAGE.--Water-stage recorder. Datum of gage is 2,839.60 ft (865.510 m) National Geodetic Vertical Datum of 1929. Prior to May 5, 1970, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 8.36 ft³/s (0.237 m³/s), 6,060 acre-ft/yr (7.47 hm³/yr); median of yearly mean discharges, 6.8 ft³/s (0.19 m³/s), 4,900 acre-ft/yr (6.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,780 ft³/s (78.7 m³/s) June 14, 1963, gage height, 9.01 ft (2.746 m), from rating curve extended above 550 ft³/s (15.6 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1956-58, 1960, 1962, 1965, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1908 reached a stage of 15.4 ft (4.69 m), from information by South Dakota Department of Transportation.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 200 ft³/s (5.66 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
July 12	1900	226	6.40	5.46	1.664	Aug. 9	0515	257	7.28	5.98	1.823
Aug. 3	1700	*300	8.50	6.19	1.887						

Minimum daily discharge, 0.63 ft³/s (0.018 m³/s) July 31.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	2.5	2.1	2.2	2.2	9.3	3.0	2.7	2.4	1.1	3.2	1.2
2	2.0	2.4	2.1	2.2	2.2	6.7	2.8	2.8	2.9	58	98	1.3
3	2.0	2.4	2.1	2.2	2.1	5.4	2.9	2.8	2.2	13	194	1.1
4	2.0	3.0	2.2	2.2	2.2	4.6	3.1	2.6	5.0	2.4	52	1.1
5	2.0	2.4	2.2	2.2	2.2	3.7	3.0	2.5	2.3	1.6	17	1.2
6	2.0	2.3	2.3	2.2	2.2	3.5	2.8	2.5	3.4	1.3	9.6	1.2
7	2.0	2.3	2.3	2.1	2.2	3.7	2.6	2.8	3.0	1.1	4.2	1.3
8	1.8	2.4	2.3	2.1	2.1	3.2	2.6	2.9	2.4	1.0	2.6	1.1
9	2.0	2.2	2.4	2.1	2.1	3.2	2.6	2.9	2.4	1.0	140	1.1
10	2.0	2.2	2.4	2.1	2.0	2.8	2.5	2.8	2.1	1.0	9.6	1.0
11	2.0	2.3	2.5	2.2	2.2	2.8	2.4	2.9	1.8	1.1	2.9	1.0
12	2.0	2.3	2.5	2.2	2.5	3.0	2.4	5.2	4.1	70	2.0	1.0
13	2.1	2.4	2.6	2.2	7.0	3.1	2.4	4.2	6.6	35	1.8	1.0
14	2.1	2.4	2.6	2.1	17	2.9	2.4	4.1	12	15	1.7	1.1
15	23	2.3	2.6	2.1	40	3.2	2.4	3.5	6.4	4.7	1.6	1.1
16	90	2.2	2.6	2.1	38	3.6	2.2	3.2	2.8	1.5	1.6	1.2
17	33	2.1	2.4	2.1	37	3.5	2.2	3.1	2.1	1.0	1.6	1.2
18	27	2.1	2.3	2.1	37	3.5	2.2	2.9	1.8	.92	1.5	1.2
19	23	2.0	2.3	2.2	27	3.3	2.2	2.8	1.6	.92	1.4	1.2
20	9.3	2.0	2.2	2.2	24	3.3	2.1	2.8	1.6	1.9	1.4	1.2
21	5.2	2.0	2.2	2.3	27	3.3	2.2	2.8	1.7	2.1	1.3	1.1
22	3.5	2.0	2.3	2.3	16	3.3	2.1	4.7	1.4	1.7	1.3	1.2
23	3.0	2.0	2.3	2.4	6.2	3.3	2.1	4.0	1.3	1.7	1.3	1.2
24	2.6	2.0	2.1	2.4	6.9	3.3	2.1	3.6	1.3	1.8	1.3	2.4
25	2.5	2.1	2.2	2.3	5.7	3.4	2.4	4.3	1.2	3.8	1.3	1.8
26	2.4	2.1	2.2	2.2	5.6	3.5	2.4	3.2	1.2	2.7	1.3	3.4
27	2.5	2.1	2.3	2.2	7.2	3.8	19	2.9	1.2	1.2	1.4	3.1
28	2.4	2.2	2.3	2.2	6.4	4.0	6.7	2.8	2.0	.92	1.3	1.8
29	2.6	2.1	2.3	2.2	---	3.6	3.6	2.8	1.4	.80	1.3	1.7
30	2.4	2.1	2.3	2.2	---	3.1	3.0	2.6	1.2	.70	1.3	1.6
31	2.4	---	2.2	2.2	---	3.2	---	2.4	---	.63	1.2	---
TOTAL	264.7	66.9	71.7	68.0	336.4	116.1	96.4	98.1	82.8	231.59	562.2	42.1
MEAN	8.54	2.23	2.31	2.19	12.0	3.75	3.21	3.16	2.76	7.47	18.1	1.40
MAX	90	3.0	2.6	2.4	40	9.3	19	5.2	12	70	194	3.4
MIN	1.8	2.0	2.1	2.1	2.0	2.8	2.1	2.4	1.2	.63	1.2	1.0
AC-FT	525	133	142	135	667	230	191	195	164	459	1120	84

CAL YR 1980 TOTAL 1317.64 MEAN 3.60 MAX 90 MIN .85 AC-FT 2610
WTR YR 1981 TOTAL 2036.99 MEAN 5.58 MAX 194 MIN .63 AC-FT 4040

BEST DOCUMENT AVAILABLE

06356500 SOUTH FORK GRAND RIVER NEAR CASH, SD

LOCATION.--Lat 45°38'56", long 102°38'27", in SW¼SW¼ sec.34, T.20 N., R.12 E., Perkins County, Hydrologic Unit 10130302, on left bank at downstream side of highway bridge, 1.0 mi (1.6 km) upstream from Little Nasty Creek, 4.0 mi (6.4 km) north of Cash, 10 mi (16 km) south of Lodgepole, 12 mi (19 km) northwest of Bison, and 16 mi (26 km) downstream from Big Nasty Creek.

DRAINAGE AREA.--1,350 mi² (3,500 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,416 ft (736 m), by barometer. Prior to Oct. 25, 1946, nonrecording gage, and Oct. 25, 1946, to May 16, 1966, water-stage recorder, at site 500 ft (152 m) upstream. May 17, 1966, to May 2, 1968, nonrecording gage, at present site, all at same datum.

REMARKS.--Records good except those for winter periods and those for September, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 53.9 ft³/s (1.526 m³/s), 39,050 acre-ft/yr (48.1 hm³/yr); median of yearly mean discharges, 35 ft³/s (0.99 m³/s), 25,400 acre-ft/yr (31 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 27,000 ft³/s (765 m³/s) Apr. 15, 1950, gage height, 15.40 ft (4.694 m), from rating curve extended above 14,000 ft³/s (396 m³/s) on basis of slope-area measurement of peak flow; no flow at times.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft³/s (30.6 m³/s) at 0815 hours, Aug. 4, gage height, 4.39 ft (1.338 m), no other peak above base of 500 ft³/s (14.2 m³/s); maximum gage height, 5.06 ft (1.542 m) Dec. 1 (backwater from ice); minimum daily discharge, 3.1 ft³/s (0.09 m³/s) July 10, 11.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 15 to Feb. 23)

1.1	3.1	1.5	21	2.5	214
1.2	5.8	1.7	43	3.0	389
1.3	9.2	2.0	91	4.0	850
1.4	14				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.8	11	8.0	13	8.5	24	11	17	12	7.4	6.7	4.5
2	8.4	11	7.5	13	8.5	43	13	14	13	8.0	6.3	4.5
3	8.4	12	8.0	12	9.0	45	12	12	13	7.0	300	4.3
4	8.3	11	8.5	12	9.5	26	13	11	14	4.2	778	4.2
5	8.7	10	8.0	13	9.5	20	13	10	14	26	508	4.0
6	6.5	11	8.0	13	9.0	17	12	8.8	24	21	238	4.0
7	7.5	11	8.0	13	9.0	16	12	9.4	28	9.8	109	4.0
8	7.0	11	7.5	13	8.5	15	12	10	23	6.9	65	4.2
9	7.8	9.8	8.0	12	8.0	15	11	11	16	3.9	46	4.2
10	7.2	11	10	12	7.0	14	10	11	16	3.1	84	4.5
11	6.3	10	11	13	7.0	14	10	12	16	3.1	162	4.2
12	6.2	10	10	14	7.5	14	10	14	19	27	77	4.0
13	7.2	11	10	13	10	14	10	15	33	110	39	3.7
14	7.8	9.0	10	13	20	14	10	15	49	89	25	3.7
15	13	8.5	9.5	12	30	14	9.8	18	62	109	41	3.5
16	20	9.0	9.5	12	40	14	10	16	59	48	57	3.5
17	123	9.0	9.5	12	50	14	9.6	15	8.8	30	16	3.5
18	224	9.5	8.5	13	45	13	8.4	13	8.2	21	11	3.7
19	141	9.0	8.5	14	45	13	8.6	12	18	14	9.2	3.7
20	99	9.0	8.5	14	40	13	7.6	12	9.2	12	8.9	4.0
21	75	9.0	9.0	15	35	13	9.9	12	29	9.9	7.7	4.0
22	65	8.5	9.0	15	33	13	8.0	14	53	8.9	7.5	4.0
23	39	8.5	9.0	15	30	13	8.5	15	41	7.5	7.2	3.9
24	26	8.5	8.0	14	36	13	8.2	19	15	10	6.8	3.8
25	20	8.5	9.0	12	84	14	8.5	20	8.0	8.5	6.8	3.8
26	13	8.5	10	11	43	13	8.5	21	6.0	7.2	6.2	3.8
27	15	9.0	12	10	40	13	10	19	5.5	7.2	5.4	4.0
28	15	9.0	14	9.5	29	13	9.7	19	5.2	8.2	5.3	6.0
29	14	9.0	15	9.0	---	13	12	15	5.0	10	5.0	8.9
30	14	8.5	15	9.0	---	13	24	15	6.0	8.9	5.0	10
31	11	---	14	9.0	---	13	---	13	---	7.8	4.5	---
TOTAL	1033.1	289.8	300.5	384.5	711.0	516	320.3	438.2	628.9	654.5	2654.5	132.1
MEAN	33.3	9.66	9.69	12.4	25.4	16.6	10.7	14.1	21.0	21.1	85.6	4.40
MAX	224	12	15	15	84	45	24	21	62	110	778	10
MIN	6.2	8.5	7.5	9.0	7.0	13	7.6	8.8	5.0	3.1	4.5	3.5
AC-FT	2050	575	596	763	1410	1020	635	869	1250	1300	5270	262

CAL YR 1980 TOTAL 4598.1 MEAN 12.6 MAX 224 MIN 1.2 AC-FT 9120
WTR YR 1981 TOTAL 8063.4 MEAN 22.1 MAX 778 MIN 3.1 AC-FT 15990

BEST DOCUMENT AVAILABLE

06357000 SHADEHILL RESERVOIR AT SHADEHILL, SD

LOCATION.--Lat 45°45'12", long 102°12'12", in E½ sec.25, T.21 N., R.15 E., Perkins County, Hydrologic Unit 10130302, at dam on Grand River, 1.3 mi (2.1 km) southwest of Shadehill.

DRAINAGE AREA.--3,120 m^2 (8,080 km^2), approximately.

PERIOD OF RECORD.--June 1950 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Apr. 3, 1952, occasional elevations obtained by level circuits and Apr. 3, 1952, to Apr. 28, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by earthfill dam. Storage began July 1, 1950; dam completed August 1951. Conservation storage, 81,443 acre-ft (100 hm^3) between elevations 2,250.8 ft (686.04 m), invert of canal and river outlet, and elevation 2,272.0 ft (692.51 m), crest of morning-glory spillway. Dead storage, 58,231 acre-ft (71.8 hm^3) below elevation 2,250.8 ft (686.04 m). Flood control, 217,708 acre-ft (268 hm^3) between elevations 2,272.0 ft (692.51 m) and 2,302.0 ft (701.65 m), crest of emergency spillway. Surcharge, 111,203 acre-ft (137 hm^3) at elevation 2,312.0 ft (704.70 m), maximum pool elevation. Total reservoir capacity is 468,585 acre-ft (578 hm^3) at elevation 2,312.0 ft (704.70 m). The reservoir provides flood control and water for irrigation purposes. Figures given herein represent usable contents above elevation 2,250.8 ft (686.04 m). Prior to Oct. 1, 1968, reservoir contents published as total contents and included dead storage.

COOPERATION.--Records of elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum usable contents observed, 259,900 acre-ft (320 hm^3) Apr. 10, 1952, elevation, 2,297.86 ft (700.388 m); minimum usable observed since first filling to spillway level, 25,950 acre-ft (32.0 hm^3) Mar. 17, 1962, elevation, 2,258.90 ft (688.51 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 33,336 acre-ft (41.1 hm^3) Oct. 23, elevation, 2,260.90 ft (689.122 m); minimum, 26,956 acre-ft (33.2 hm^3) Sept. 28, 29, elevation, 2,259.18 ft (688.598 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents
Sept. 30	2260.90	33336	
Oct. 31	2260.86	33184	-152
Nov. 30	2260.76	32805	-379
Dec. 31	2260.62	32277	-528
CAL YR 1980			-15843
Jan. 31	2260.64	32352	+75
Feb. 28	2260.71	32616	+264
Mar. 31	2260.83	33070	+454
Apr. 30	2260.64	32352	-718
May 31	2260.16	30555	-1797
June 30	2259.81	29257	-1298
July 31	2259.72	28926	-331
Aug. 31	2259.90	29590	+664
Sept. 30	2259.19	26956	-2634
WTR YR 1981			-6380

06357500 GRAND RIVER AT SHADEHILL, SD

LOCATION.--Lat 45°45'25", long 102°11'41", in NW¼NW¼ sec.30, T.21 N., R.16 E., Perkins County, Hydrologic Unit 10130303, on left bank 0.2 mi (0.3 km) downstream from Shadehill Dam, 1.1 mi (1.8 km) southwest of Shadehill, and 12.0 mi (19.3 km) southwest of Lemmon.

DRAINAGE AREA.--3,120 mi² (8,080 km²), approximately.

PERIOD OF RECORD.--February 1943 to current year. Records for July 1904 to October 1906 collected at site 4 mi (6 km) upstream and published as "at Seim" in WSP 130, 172, and 208 have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 1279: 1943(M). See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 2,192.48 ft (668.268 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 31, 1947, nonrecording gage, and Aug. 31, 1947, to Oct. 24, 1958, water-stage recorder at site 0.8 mi (1.3 km) downstream at datum 6.02 ft (1.835 m) lower.

REMARKS.--Records good except those for winter periods, which are fair. Flow completely regulated by Shadehill Reservoir since July 1, 1950. (See station 06357000.)

AVERAGE DISCHARGE.--38 years, 115 ft³/s (3.257 m³/s), 83,320 acre-ft/yr (103 hm³/yr); median of yearly mean discharges, 65 ft³/s (1.84 m³/s), 47,100 acre-ft/yr (58 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 58,000 ft³/s (1,640 m³/s) Apr. 16, 1950, gage height, 21.0 ft (6.40 m), from floodmarks upstream from bridge; 19.06 ft (5.809 m), from floodmark in gage well, unreliable, site and datum then in use; no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 49 ft³/s (1.39 m³/s) Sept. 21, 22, 25-27; maximum gage height, 3.44 ft (1.049 m) Dec. 1 (backwater from ice); minimum daily discharge, 7.0 ft³/s (0.20 m³/s) Nov. 14, 15, Dec. 2, 24.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 12 to Sept. 30; stage-discharge relation
affected by ice Dec. 1-3, 5-15, 17-26, Jan. 17, Jan. 26 to Feb. 13)

2.5	5.5	3.0	39
2.6	9.2	3.1	50
2.8	20		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	9.2	7.5	9.6	9.5	9.9	10	22	25	22	41	43
2	15	8.9	7.0	9.7	9.5	9.9	10	22	26	23	42	43
3	15	8.2	7.5	10	9.0	10	11	22	26	23	42	43
4	14	7.9	7.8	10	9.0	10	11	21	25	23	41	43
5	14	7.8	8.0	10	9.5	10	11	22	25	23	42	44
6	14	8.1	7.5	10	9.5	10	11	23	25	23	43	44
7	13	8.2	7.5	11	9.5	10	11	18	25	24	42	44
8	13	8.1	7.5	10	9.0	10	11	18	25	31	43	45
9	14	8.6	7.5	11	9.0	10	12	19	24	42	43	45
10	13	9.1	8.0	11	8.5	10	12	19	25	41	44	45
11	13	8.8	8.5	11	8.0	9.9	12	20	24	42	42	46
12	13	8.9	8.5	11	8.5	9.8	12	20	24	43	42	46
13	13	8.6	8.5	11	9.0	9.9	13	20	24	41	43	46
14	13	7.0	8.0	11	9.1	9.8	13	20	24	41	42	46
15	13	7.0	8.0	11	9.3	9.9	13	21	24	41	43	47
16	13	7.3	8.1	11	9.3	10	13	21	23	41	43	47
17	13	7.6	8.0	10	9.3	11	11	21	23	41	43	47
18	13	7.8	7.5	10	9.3	11	11	21	22	41	43	48
19	13	8.0	7.5	10	9.3	11	12	21	22	42	43	48
20	13	7.5	7.5	11	9.1	11	11	21	21	42	42	48
21	12	7.3	7.5	11	8.8	11	9.7	22	21	42	42	49
22	8.3	7.8	8.0	11	9.1	11	10	23	21	42	41	49
23	7.6	8.1	7.5	11	9.1	10	10	23	22	42	41	48
24	8.0	8.0	7.0	11	9.9	10	9.7	23	21	42	41	48
25	8.4	7.8	7.5	11	10	10	10	23	21	43	41	49
26	8.5	7.8	8.0	11	10	11	11	23	21	43	41	49
27	8.7	7.6	9.0	11	9.8	11	11	25	21	43	41	49
28	8.9	7.6	8.5	10	9.8	10	12	24	22	42	41	33
29	8.9	7.8	8.7	10	---	11	13	24	22	42	42	15
30	8.6	7.9	9.0	10	---	11	21	25	22	41	42	15
31	9.1	---	9.3	10	---	11	---	25	---	41	42	---
TOTAL	367.0	240.3	245.9	326.3	258.7	320.1	348.4	672	696	1153	1304	1312
MEAN	11.8	8.01	7.93	10.5	9.24	10.3	11.6	21.7	23.2	37.2	42.1	43.7
MAX	15	9.2	9.3	11	10	11	21	25	26	43	44	49
MIN	7.6	7.0	7.0	9.6	8.0	9.8	9.7	18	21	22	41	15
AC-FT	728	477	488	647	513	635	691	1330	1380	2290	2590	2600

CAL YR 1980 TOTAL 7638.2 MEAN 20.9 MAX 72 MIN 7.0 AC-FT 15150
WTR YR 1981 TOTAL 7243.7 MEAN 19.8 MAX 49 MIN 7.0 AC-FT 14370

06357800 GRAND RIVER AT LITTLE EAGLE, SD

LOCATION.--Lat 45°39'28", long 100°49'04", in NE¼NE¼ sec.32, T.20 N., R.27 E., Corson County, Hydrologic Unit 10130303, on left bank at downstream side of bridge on State Highway 63, 1.3 mi (2.1 km) southwest of Little Eagle and 4.7 mi (7.6 km) downstream from Little Oak Creek.

DRAINAGE AREA.--5,370 mi² (13,910 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--July 1958 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,628.63 ft (496.406 m) National Geodetic Vertical Datum of 1929. Prior to May 12, 1959, nonrecording gage, and May 12, 1959, to Aug. 11, 1970, water-stage recorder at site 0.6 mi (1.0 km) downstream at datum 2.00 ft (0.610 m) lower.

REMARKS.--Records good except those for winter period, which are poor. Flow regulated by Shadehill Reservoir 144 mi (232 km) upstream. (See station 06357000.)

AVERAGE DISCHARGE.--23 years, 229 ft³/s (6.485 m³/s), 165,900 acre-ft/yr (205 hm³/yr); median of yearly mean discharges, 180 ft³/s (5.10 m³/s), 130,000 acre-ft/yr (160 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,000 ft³/s (538 m³/s) Mar. 23, 1978; maximum gage height, 21.76 ft (6.632 m) Mar. 18, 1966, from floodmarks, ice jam, site and datum then in use; no flow at times in 1958-62, 1969, 1975, 1977-81.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,820 ft³/s (51.5 m³/s) at 0745 hours, Aug. 5, gage height, 6.10 ft (1.859 m); maximum gage height, 9.32 ft (2.841 m) Feb. 1 (backwater from ice); no flow Feb. 8-13.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Nov. 9-14; stage-discharge relation affected by ice Nov. 15 to Mar. 15)

2.3	1.5	2.7	23	3.5	154	5.0	880
2.4	3.8	2.9	44	4.0	312	6.0	1,720
2.5	8.1	3.2	89	4.5	556		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.0	25	5.0	5.5	.20	22	16	4.7	32	41	23	14
2	5.5	25	5.0	5.0	.15	22	15	4.7	25	47	31	14
3	5.5	23	5.5	5.0	.15	21	14	4.7	18	38	55	14
4	5.1	22	5.5	5.0	.20	21	15	4.7	12	24	533	15
5	5.1	21	5.0	5.0	.20	20	16	4.7	8.8	14	1430	13
6	5.5	20	5.0	5.0	.15	19	14	4.7	9.5	7.7	706	31
7	5.1	20	4.5	5.0	.10	19	13	4.7	14	6.8	936	82
8	5.1	19	4.5	4.8	.00	18	14	4.7	13	6.4	457	655
9	5.1	18	4.5	4.5	.00	18	14	4.2	17	6.0	230	408
10	4.7	18	5.0	4.5	.00	18	14	4.2	15	6.0	149	202
11	4.2	17	5.5	4.7	.00	18	14	4.2	12	5.5	117	126
12	4.2	16	5.5	4.7	.00	19	14	3.8	18	42	98	87
13	4.7	16	5.0	4.2	.00	20	14	3.6	39	995	82	67
14	4.2	10	5.0	4.0	.35	25	14	3.6	149	790	66	56
15	5.1	9.5	4.5	4.0	.60	29	14	3.6	285	297	55	53
16	75	9.5	3.5	4.2	1.5	30	12	3.8	202	149	47	46
17	337	10	3.0	4.5	3.0	28	8.1	3.8	119	93	42	42
18	950	10	3.0	4.5	6.0	22	6.4	4.2	68	70	41	39
19	533	10	3.1	4.5	10	18	5.5	3.8	49	108	140	38
20	274	10	3.2	4.7	20	14	6.4	3.8	39	648	135	36
21	164	10	3.2	5.0	22	12	6.8	3.6	34	995	80	34
22	110	9.5	3.0	5.0	24	12	6.4	3.3	28	230	55	32
23	80	9.5	2.5	4.8	25	12	5.5	3.8	24	119	44	32
24	64	9.5	2.0	4.5	25	13	5.5	6.4	21	98	37	30
25	51	9.0	2.5	4.0	25	13	5.5	7.2	20	167	31	30
26	45	9.0	3.5	3.5	24	13	5.5	7.2	23	96	30	31
27	40	8.5	5.0	2.5	23	13	5.1	7.2	22	64	31	31
28	34	8.0	6.0	2.0	23	13	4.7	9.5	18	46	28	31
29	30	7.0	6.0	1.5	---	14	4.7	10	70	37	22	31
30	30	6.0	5.5	1.0	---	14	4.7	9.5	91	31	19	32
31	25	---	5.5	.50	---	15	---	17	---	26	14	---
TOTAL	2917.1	415.0	135.5	127.60	233.60	565	307.8	168.9	1495.3	5303.4	5764	2352
MEAN	94.1	13.8	4.37	4.12	8.34	18.2	10.3	5.45	49.8	171	186	78.4
MAX	950	25	6.0	5.5	25	30	16	17	285	995	1430	655
MIN	4.2	6.0	2.0	.50	.00	12	4.7	3.3	8.8	5.5	14	13
AC-FT	5790	823	269	253	463	1120	611	335	2970	10520	11430	4670

CAL YR 1980 TOTAL 17093.61 MEAN 46.7 MAX 1950 MIN .00 AC-FT 33910
WTR YR 1981 TOTAL 19785.20 MEAN 54.2 MAX 1430 MIN .00 AC-FT 39240

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956, 1969, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1975 to September 1976, October 1977 to September 1978.
WATER TEMPERATURES: October 1975 to September 1978.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).

REMARKS.--No flow Jan. 26 to Feb. 21.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,100 micromhos Dec. 4, 7-9, 1976; minimum daily, 290 micromhos Feb. 7, 1976.
WATER TEMPERATURES: Maximum daily, 33.0°C Aug. 26, 1976; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 19,000 mg/L May 2, 1972; minimum daily mean, 0 mg/L Jan. 10, 11, Feb. 5-10, 1975.
SEDIMENT LOADS: Maximum daily, 259,000 tons (235,000 tonnes) Mar. 12, 1972; minimum daily, 0 ton (0 tonne) Jan. 10, 11, Feb. 5-10, 1975.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
OCT										
15...	0950	4.3	2540	8.3	5.4	1.3	10.8	66	113	370
NOV										
13...	0815	16	1740	8.6	2.5	72	11.3	--	K30	260
DEC										
17...	0915	3.0	2970	8.1	.2	3.5	11.5	132	307	440
JAN										
07...	0910	5.0	2820	7.9	1.0	7.1	14.1	--	K19	450
MAR										
11...	1015	18	1180	8.6	.6	76	12.0	ND	K23	170
APR										
09...	0840	14	2070	8.5	5.2	12	10.9	--	190	300
MAY										
06...	0845	4.6	2710	8.4	11.8	10	--	320	295	350
JUN										
04...	0900	12	2300	8.4	17.8	80	7.4	260	220	220
JUL										
01...	0850	42	1517	8.4	20.7	1900	7.0	K3500	K2500	120
AUG										
27...	0810	30	1061	8.3	19.1	650	7.9	500	350	100
SEP										
29...	0910	31	2110	8.5	10.0	92	--	K87	K33	220

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT										
15...	91	76	44	480	73	11	13	610	280	330
NOV										
13...	0	63	25	320	72	8.6	10	580	340	13
DEC										
17...	0	88	53	610	75	13	11	1100	520	30
JAN										
07...	0	88	57	670	75	14	18	1200	630	25
MAR										
11...	0	35	19	240	75	8.1	5.3	410	250	10
APR										
09...	0	61	36	420	75	11	8.7	860	300	26
MAY										
06...	0	64	47	530	76	12	11	1000	410	34
JUN										
04...	0	41	29	480	82	14	11	750	420	17
JUL										
01...	0	28	11	310	84	13	7.9	500	270	9.4
AUG										
27...	0	25	9.7	210	81	9.8	6.5	280	210	42
SEP										
29...	0	37	30	430	80	13	9.8	730	390	22

K Non-ideal colony count.
ND Not detected.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT										
15...	.3	3.1	1450	1730	1.9	16.6	--	.00	.00	.000
NOV										
13...	.4	5.9	1280	1220	1.7	55.6	90	.01	.01	.050
DEC										
17...	.4	6.3	2280	2210	3.1	18.5	16	.00	.00	.000
JAN										
07...	.6	5.1	2420	2440	3.2	32.7	--	.05	.04	.070
MAR										
11...	.3	3.3	768	673	1.0	38.3	150	.03	.00	.090
APR										
09...	.4	2.7	1520	1600	2.0	57.5	--	.01	.01	.060
MAY										
06...	.4	2.5	2020	1940	2.7	25.3	23	.08	.03	.140
JUN										
04...	.4	3.6	1660	1580	2.2	53.8	118	.01	.07	.140
JUL										
01...	.4	8.8	1090	1040	1.4	124	2710	.27	1.0	.030
AUG										
27...	.3	8.9	856	712	1.1	69.3	808	.78	.79	<.060
SEP										
29...	.6	4.6	1510	1500	2.0	127	164	.13	.11	.120

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
OCT										
15...	.00	.000	.69	.88	.69	.19	.88	.69	.88	3.9
NOV										
13...	.06	.050	.85	.95	.90	.10	1.00	.91	1.0	4.5
DEC										
17...	.00	.030	.82	1.1	.82	.28	1.10	.82	1.1	4.9
JAN										
07...	.09	.080	.91	1.3	.98	.42	1.40	1.0	1.4	6.4
MAR										
11...	.12	.040	2.0	.83	2.1	.00	.87	2.1	.87	3.9
APR										
09...	.08	.040	.83	.76	.89	.00	.80	.90	.81	3.6
MAY										
06...	.18	.070	.86	1.2	1.0	.30	1.30	1.1	1.3	5.9
JUN										
04...	.18	.170	1.2	1.2	1.3	.10	1.40	1.3	1.5	6.5
JUL										
01...	.04	.080	2.0	6.8	2.0	4.9	6.90	2.3	7.9	35
AUG										
27...	.08	<.060	.82	1.3	1.3	.10	1.40	2.1	2.2	9.7
SEP										
29...	.15	.140	.82	.96	.94	.16	1.10	1.1	1.2	5.4

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BEST DOCUMENT AVAILABLE

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
OCT									
15...	--	.050	.090	.28	--	14	--	--	--
NOV									
13...	.040	.030	.110	.34	.12	--	--	14	--
DEC									
17...	.010	.030	.040	.12	.03	--	--	14	--
JAN									
07...	--	.040	.050	.15	--	27	--	--	--
MAR									
11...	.010	.020	.110	.34	--	--	--	9.5	4800
APR									
09...	--	.030	.040	.12	--	14	.0	--	--
MAY									
06...	.050	.040	.050	.15	--	--	--	9.7	1400
JUN									
04...	.020	.020	.100	.31	--	--	--	8.4	27000
JUL									
01...	.070	.050	.980	3.0	--	20	2.0	--	--
AUG									
27...	.040	<.010	.230	.71	--	--	--	14	--
SEP									
29...	.040	.020	.040	.12	--	--	--	12	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
15...	0950	4.3	--	--	--	--	--	--	--	--	--	--
NOV												
13...	0815	16	--	--	--	--	--	--	--	--	--	--
DEC												
17...	0915	3.0	--	--	--	--	--	--	--	--	--	--
JAN												
07...	0910	5.0	47	.64	--	--	--	--	80	100	--	--
MAR												
11...	1015	18	275	13	--	--	--	--	--	--	--	--
APR												
09...	0840	14	240	9.1	--	--	--	--	--	--	--	--
MAY												
06...	0845	4.6	28	.35	--	--	--	--	--	--	--	--
JUN												
04...	0900	12	287	9.3	98	05	96	97	--	--	--	--
JUL												
01...	0850	42	4880	553	100	90	--	100	--	--	--	--
AUG												
27...	0810	30	1340	109	99	95	95	99	100	--	--	--
SEP												
29...	0910	31	360	30	96	--	--	--	--	--	--	--

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BEST DOCUMENT AVAILABLE

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT 15...	0950	1	0	1	0	0	0	10	0	10	0
JAN 07...	0910	1	0	1	0	0	0	10	10	0	1
APR 09...	0840	1	0	1	0	0	0	20	10	10	0
JUL 01...	0850	16	14	2	0	0	0	90	80	10	38

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 15...	0	0	6	2	4	560	20	3	3	0	100
JAN 07...	1	0	6	2	4	300	70	3	0	3	80
APR 09...	0	1	7	2	5	340	30	0	0	0	100
JUL 01...	38	0	150	130	17	60000	100	52	52	0	1100

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 15...	20	80	.1	.0	.1	0	0	0	20	10	10
JAN 07...	10	70	.3	.2	.1	1	0	1	20	0	20
APR 09...	50	50	2.0	1.1	.9	0	0	0	20	10	10
JUL 01...	1100	10	6.0	2.2	3.8	0	0	0	320	310	10

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)
NOV 13...	0815	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAR 05...	0845	ND	ND	ND	ND	ND	ND	ND	--	ND

DATE	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
NOV 13...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MAR 05...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

ND Not detected.

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 13,80	MAR 11,81	MAY 6,81	JUN 4,81	SEP 29,81
TIME	0815	1015	0845	0900	0910
TOTAL CELLS/ML	11000	4800	1400	27000	1700
DIVERSITY: DIVISION	1.5	1.4	1.6	1.5	1.6
.CLASS	1.5	1.4	1.6	1.5	1.7
..ORDER	1.7	1.6	1.9	2.0	2.2
...FAMILY	2.0	2.8	2.5	2.5	2.5
....GENUS	2.5	3.0	3.4	2.7	2.8

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)										
.CHLOROPHYCEAE										
..CHLOROCOCCALES										
...CHARACIACEAE										
....SCHROEDERIA	--	-	100	2	--	-	--	-	--	-
...OOCYSTACEAE										
....ANKISTRODESMUS	830	8	100	2	330#	24	9100#	33	180	11
....DICTYOSPHAERIUM	830	8	240	5	180	13	420	2	--	-
....KIRCHNERIELLA	--	-	35	1	--	-	140	1	--	-
....OOCYSTIS	75	1	--	-	13	1	--	-	68	4
....SELENASTRUM	1200	11	--	-	26	2	--	-	110	7
....TETRAEDRON	--	-	--	-	--	-	--	-	14	1
...SCENEDESMACEAE										
....ACTINASTRUM	300	3	--	-	--	-	1100	4	--	-
....CRUCIGENIA	--	-	--	-	51	4	--	-	--	-
....SCENEDESMUS	600	6	--	-	100	7	--	-	110	7
....TETRASTRUM	--	-	--	-	51	4	--	-	--	-
..VOLVOCALES										
...CHLAMYDOMONADACEAE										
....CHLAMYDOMONAS	380	4	310	6	--	-	--	-	41	2
CHRYSOPHYTA										
.BACILLARIOPHYCEAE										
..CENTRALES										
...COSCINODISCACEAE										
....CYCLOTELLA	4800#	45	--	-	77	6	420	2	--	-
....MELOSIRA	--	-	--	-	--	-	560	2	--	-
....STEPHANODISCUS	--	-	--	-	90	6	--	-	--	-
..PENNALES										
...ACHNANTHACEAE										
....ACHNANTHES	--	-	35	1	--	-	280	1	--	-
...CYMBELLACEAE										
....CYMBELLA	--	-	170	4	--	-	--	-	--	-
....EPITHEMIA	--	-	--	-	--	-	140	1	--	-
...DIATOMACEAE										
....DIATOMA	--	-	35	1	--	-	--	-	--	-
...FRAGILARIACEAE										
....SYNEDRA	--	-	240	5	26	2	2000	7	--	-
...GOMPHONEMATACEAE										
....GOMPHONEMA	--	-	69	1	--	-	--	-	--	-
...NAVICULACEAE										
....ENTOMONEIS	--	-	35	1	90	6	--	-	--	-
....NAVICULA	--	-	350	7	--	-	700	3	--	-
...NITZSCHIACEAE										
....NITZSCHIA	75	1	1700#	36	68	5	840	3	360#	21
...SURIRELLACEAE										
....SURIRELLA	--	-	280	6	--	-	280	1	--	-
.CHRYSOPHYCEAE										
..CHRYSOMONADALES										
...OCHROMONADACEAE										
....OCHROMONAS	--	-	--	-	--	-	--	-	14	1
CYANOPHYTA (BLUE-GREEN ALGAE)										
.CYANOPHYCEAE										
..CHROOCOCCALES										
...CHROOCOCCACEAE										
....ANACYSTIS	1500	14	--	-	140	10	7800#	29	300#	18
..HORMOGONALES										
...OSCILLATORIACEAE										
....OSCILLATORIA	--	-	1000#	22	--	-	3500	13	470#	28
EUGLENOPHYTA (EUGLENOIDS)										
.EUGLENOPHYCEAE										
..EUGLENALES										
...EUGLENACEAE										
....EUGLENA	--	-	--	-	13	1	--	-	--	-
....TRACHELOMONAS	75	1	35	1	130	9	--	-	27	2

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06357800 GRAND RIVER AT LITTLE EAGLE, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1620	3600	3200	2700	---	---	1780	---	2380	1520	---	---
2	---	3600	---	3100	1200	1850	---	---	2380	---	---	---
3	1500	2850	---	---	8500	1050	---	2500	---	2350	---	---
4	740	3600	---	---	2600	1050	---	---	2300	---	---	---
5	---	3300	---	---	---	1890	---	2380	---	---	510	---
6	---	3000	3300	1400	4800	2300	2000	2710	---	2300	---	---
7	---	2750	---	2820	5600	1860	2050	---	---	---	475	---
8	---	3500	3600	2700	---	2260	2050	---	---	1900	---	---
9	---	2700	---	2900	---	495	2070	---	---	---	---	---
10	---	2500	3500	2700	---	1260	2700	---	---	1500	---	---
11	2900	3500	3400	---	---	1180	2700	2400	---	---	---	---
12	2500	3400	3150	1360	---	---	---	2450	---	---	---	---
13	---	1740	3500	3000	1080	---	2650	2500	---	---	---	---
14	1340	1550	---	1500	2430	---	2580	2500	---	---	---	---
15	2540	1280	2900	2900	1080	1460	2600	---	---	---	---	---
16	3400	---	2900	1040	750	1900	2600	---	---	---	---	---
17	1460	3400	2970	2700	2500	---	2580	---	---	---	---	---
18	2250	3300	---	---	1100	1900	2600	2400	---	1260	---	---
19	---	3400	---	2000	---	1900	---	2450	---	2000	---	---
20	2800	2700	---	2800	1080	1750	2580	2400	---	---	---	---
21	---	3400	---	2700	2210	1650	---	2380	---	---	---	---
22	3100	3400	1700	2900	---	---	2600	---	---	---	---	---
23	---	3100	---	2150	1110	1800	2600	---	---	---	---	---
24	---	3300	---	2300	1040	1900	2600	2380	---	---	---	---
25	2700	3400	---	2700	530	1830	---	---	---	1460	---	---
26	1850	3200	---	2800	1050	1760	---	2400	---	---	---	---
27	3100	3500	---	2200	1160	1900	2580	---	---	---	1060	---
28	---	3100	---	---	160	1850	---	2500	---	---	---	---
29	2600	3500	---	1700	---	---	---	---	---	---	---	2110
30	1440	---	1110	2400	---	1850	---	---	---	---	---	---
31	---	---	---	1700	---	1880	---	2380	---	---	---	---
MEAN	2230	3040	2940	2370	1890	1690	2440	2450	2350	1790	682	2110

```
        INITIAL DATE                                81/05/06  81/05/06  81/05/15  81/07/22  81/07/22
        INITIAL TIME-DEPTH-BOTTOM                   0830 0000 0830 0001 0830      1115 0000 1115 0001
        FINAL DATE                                            81/05/06                      81/07/22
        FINAL TIME-NUMBER OF SAMPLES                          0845 6                        1130 6
        CP-SPACE OR TIME-STATISTICAL FUNC                     CP-S                          CP-S
   00010  WATER     TEMP       CENT                 11.8                          21.5
   00011  WATER     TEMP       FAHN                 53.2                          70.7
   00020   AIR      TEMP       CENT                 4.5                           22.7
   00032  CLOUD     COVER      PERCENT              70
   00035   WIND     VELOCITY   MPH                  15.0
   00036   WIND     DIR.FROM   NORTH-0              180
   00061  STREAM    FLOW,      INST-CFS             5                             228
   00065  STREAM    STAGE      FEET                 2.48                          3.07
   00094 CNDUCTVY   FIELD      MICROMHO             2710                          484
   00299    DO      PROBE      MG/L                                               6.5
   00301    DO      SATUR      PERCENT                                            73.9
   00400    PH                 SU                   8.40                          8.20
   00720 CYANIDE    CN-TOT     MG/L                           0.000     0.000               0.000
   31616 FEC COLI   MFM-FCBR   /100ML               298
```

Analyses by Corps of Engineers.
Tables from STORET.

06359500 MOREAU RIVER NEAR FAITH, SD

LOCATION.--Lat 45°11'52", long 102°09'22", in NW¼NW¼ sec.10, T.14 N., R.16 E., Perkins County, Hydrologic Unit 10130306, on left bank 10 ft (3 m) downstream from bridge on State Highway 73, 3.1 mi (5.0 km) downstream from Rabbit Creek and 13.5 mi (21.7 km) northwest of Faith.

DRAINAGE AREA.--2,660 mi² (6,890 km²), approximately.

PERIOD OF RECORD.--March 1943 to current year.

REVISED RECORDS.--WSP 1176: 1944. WSP 1279: 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 2,238.68 ft (682.350 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1949, nonrecording gage 0.3 mi (0.5 km) upstream and Oct. 5, 1949, to July 16, 1959, nonrecording gage and crest-stage gage at present site; both at datum 1.0 ft (0.30 m) higher. July 17, 1959, to Sept. 1, 1971, recording gage at site 500 ft (152 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--38 years, 132 ft³/s (3.738 m³/s), 95,630 acre-ft/yr (118 hm³/yr); median of yearly mean discharges, 92 ft³/s (2.61 m³/s), 66,700 acre-ft/yr (82 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,000 ft³/s (736 m³/s) Apr. 9, 1944, gage height, 20.9 ft (6.37 m), from floodmarks, site and datum then in use, from rating curve extended above 12,000 ft³/s (340 m³/s) on basis of slope-area measurement of peak flow; no flow at times in 1944, 1946, 1948-51, 1955-66, 1968-71, 1974-75, 1978-81.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 535 ft³/s (15.2 m³/s) at 1115 hours, Aug. 3, gage height, 4.61 ft (1.405 m), no peak above base of 1,500 ft³/s (42.5 m³/s); no flow Oct. 6-14.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Apr. 11-15, Aug. 24 to Sept. 18; stage-discharge relation affected by ice Nov. 14 to Mar. 5, Mar. 8)

1.4	0	1.7	5.1	2.2	40	3.5	236
1.5	.40	1.8	10	2.5	71	4.0	357
1.6	1.8	2.0	24	3.0	141	5.0	665

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.23	7.2	3.5	9.5	8.5	23	8.2	1.1	13	12	53	1.5
2	.13	6.6	3.3	9.0	8.0	23	7.2	1.3	7.2	11	55	1.5
3	.11	6.6	3.5	8.5	7.5	25	7.2	1.1	6.6	11	281	1.4
4	.07	5.6	3.8	8.5	7.5	25	6.6	1.8	7.2	6.2	165	1.3
5	.01	5.1	3.6	9.0	8.0	23	8.2	2.1	7.7	4.0	182	1.7
6	.00	5.6	3.5	9.0	8.0	22	4.7	3.1	4.5	2.4	459	2.2
7	.00	4.7	3.3	9.0	7.5	33	7.7	2.1	3.1	1.4	390	2.6
8	.00	4.1	3.3	8.8	7.0	30	6.1	1.2	2.8	.70	253	3.0
9	.00	5.1	3.3	8.5	6.5	15	8.2	1.8	3.0	.38	217	3.4
10	.00	6.6	3.5	8.0	6.0	14	5.6	2.1	4.1	.23	195	6.0
11	.00	4.1	4.0	8.0	6.5	15	8.2	2.1	2.7	.15	110	8.7
12	.00	4.1	4.5	8.5	8.0	12	7.7	1.6	14	21	96	7.0
13	.00	4.1	4.5	9.0	11	11	6.6	9.8	311	27	72	5.2
14	.00	4.1	4.3	9.0	15	9.8	8.7	8.7	139	14	75	3.4
15	1.6	4.0	4.2	8.5	20	9.3	8.7	8.7	83	8.8	61	3.2
16	58	4.0	4.2	8.5	23	9.3	6.6	9.0	48	6.8	51	3.1
17	96	4.2	4.0	8.5	25	10	4.7	9.3	47	6.5	39	2.8
18	112	4.5	3.5	9.0	25	9.3	4.7	12	47	2.1	56	2.4
19	142	4.5	3.0	9.0	24	8.2	4.4	7.2	79	4.6	54	2.3
20	90	4.5	3.1	9.5	24	9.8	3.5	5.6	58	32	38	2.2
21	66	4.5	3.3	10	22	9.3	2.7	5.6	44	18	19	2.1
22	51	4.3	3.2	10	22	8.2	2.7	6.5	31	12	16	2.0
23	36	4.0	3.0	11	21	8.7	2.7	7.5	13	7.0	13	1.8
24	30	4.0	2.8	11	20	8.2	3.1	8.5	7.7	4.1	10	1.8
25	25	4.1	3.0	11	20	6.6	2.7	9.8	3.4	2.6	7.5	1.8
26	23	4.2	4.0	10	21	8.7	2.7	8.7	2.1	13	5.1	2.0
27	19	4.3	6.0	9.5	24	7.2	2.6	13	1.3	29	3.8	2.2
28	19	4.3	9.0	9.5	24	7.2	2.4	23	8.7	31	2.4	2.4
29	16	4.2	10	9.0	---	7.5	1.6	14	45	25	2.2	4.7
30	14	4.0	10	9.0	---	7.7	1.3	12	20	17	1.9	21
31	9.3	---	9.5	9.0	---	6.6	---	9.3	---	14	1.6	---
TOTAL	808.45	141.2	137.7	284.3	430.0	422.6	158.0	209.6	1064.1	344.96	2984.5	106.7
MEAN	26.1	4.71	4.44	9.17	15.4	13.6	5.27	6.76	35.5	11.1	96.3	3.56
MAX	142	7.2	10	11	25	33	8.7	23	311	32	459	21
MIN	.00	4.0	2.8	8.0	6.0	6.6	1.3	1.1	1.3	.15	1.6	1.3
AC-FT	1600	280	273	564	853	838	313	416	2110	684	5920	212

CAL YR 1980 TOTAL 5222.97 MEAN 14.3 MAX 535 MIN .00 AC-FT 10360
WTR YR 1981 TOTAL 7092.11 MEAN 19.4 MAX 459 MIN .00 AC-FT 14070

06360500 MOREAU RIVER NEAR WHITEHORSE, SD

LOCATION.--Lat 45°15'21", long 100°50'33", in SW¼SE¼ sec.17, T.15 N., R.27 E., Dewey County, Hydrologic Unit 10130306, on left bank 30 ft (9 m) downstream from bridge, 2.4 mi (3.9 km) southeast of Whitehorse, 8.8 mi (14.2 km) downstream from Little Moreau River, and 16.3 mi (26.2 km) southeast of town of Timber Lake.

DRAINAGE AREA.--4,880 mi^2 (12,640 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1954 to current year.

REVISED RECORDS.--WRD SD-78-1: 1977.

GAGE.--Water-stage recorder. Datum of gage is 1,661.48 ft (506.419 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 24, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. U.S. Weather Bureau gage-height telemeter at station.

AVERAGE DISCHARGE.--27 years, 192 ft^3/s (5.437 m^3/s), 139,100 acre-ft/yr (172 hm^3/yr); median of yearly mean discharges, 110 ft^3/s (3.12 m^3/s), 79,700 acre-ft/yr (98 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 25,600 ft^3/s (725 m^3/s) Mar. 24, 1978, gage height, 25.31 ft (7.714 m); maximum gage height, 26.20 ft (7.986 m) Mar. 14, 1972 (backwater from ice); no flow at times each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in June 1953 reached a stage of about 26.2 ft (7.99 m). Flood in March 1947 was probably higher.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,380 ft^3/s (39.1 m^3/s) at 2245 hours, Oct. 16, gage height, 5.85 ft (1.783 m), no peak above base of 1,800 ft^3/s (51.0 m^3/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 29, Dec. 3 to Feb. 26;
shifting-control method used Feb. 27 to June 13, July 12-21, Sept. 21-30)

0.60	0	0.90	5.6	1.3	32	3.0	367
.70	.50	1.0	9.9	1.5	56	4.0	670
.80	2.4	1.1	15	2.0	134	5.0	1,040

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	16	.18	.12	.00	70	.00	.00	.00	16	15	4.7
2	.00	15	.22	.10	.00	66	.00	.00	.00	36	76	3.2
3	.00	13	.10	.08	.00	50	.00	.00	.00	20	512	1.3
4	.00	14	.05	.07	.00	36	.00	.00	.00	4.9	363	.67
5	.00	12	.02	.06	.00	31	.00	.00	.00	2.5	658	.49
6	.00	10	.00	.05	.00	35	.00	.00	.00	9.3	445	.68
7	.00	7.3	.00	.04	.00	30	.00	.00	.00	10	500	.66
8	.00	7.4	.00	.03	.00	29	.00	.00	.00	6.7	416	350
9	.00	6.8	.00	.03	.00	25	.00	.00	.00	4.3	658	621
10	.00	7.0	.00	.02	.00	29	.00	.00	.00	2.7	453	234
11	.00	6.5	.00	.02	.00	21	.00	.00	.00	1.4	324	106
12	.00	7.0	.00	.01	.00	18	.00	.00	.00	.50	301	59
13	.00	6.0	.00	.00	.00	13	.00	.00	234	.25	285	36
14	.00	5.6	.00	.00	.00	13	.00	.00	370	.05	356	24
15	.00	5.3	.00	.00	.05	11	.00	.00	758	.00	141	17
16	341	4.1	.00	.00	.10	7.8	.00	.00	474	.00	257	12
17	606	3.7	.00	.00	.25	5.2	.00	.00	263	.00	264	8.9
18	140	3.4	.00	.00	.35	3.0	.00	.00	175	.00	636	6.6
19	364	2.8	.00	.00	.40	2.0	.00	.00	115	.00	277	4.0
20	248	2.1	.00	.00	.38	1.7	.00	.00	77	7.0	142	2.2
21	138	2.2	.00	.00	.32	1.2	.00	.00	59	534	87	.69
22	128	2.0	.00	.00	.40	.64	.00	.00	41	525	64	.25
23	121	1.7	.00	.00	1.0	.33	.00	.00	31	234	96	.00
24	86	1.5	.00	.00	5.0	.20	.00	.00	22	94	73	.00
25	70	1.2	.00	.00	23	.18	.00	.00	27	61	36	.00
26	53	.88	.05	.00	19	.03	.00	.00	23	51	25	.00
27	45	.66	.10	.00	20	.00	.00	.00	18	35	19	.00
28	31	.45	.14	.00	45	.00	.00	.00	148	27	14	.00
29	26	.40	.15	.00	---	.00	.00	.00	124	20	10	.00
30	23	.32	.15	.00	---	.00	.00	.00	40	15	7.6	.00
31	18	---	.13	.00	---	.00	---	.00	---	13	6.0	---
TOTAL	2438.00	166.31	1.29	.63	115.25	499.28	.00	.00	2999.00	1730.60	7516.6	1493.30
MEAN	78.6	5.54	.042	.020	4.12	16.1	.000	.000	100	55.8	242	49.8
MAX	606	16	.22	.12	45	70	.00	.00	758	534	658	621
MIN	.00	.32	.00	.00	.00	.00	.00	.00	.00	.00	6.0	.00
AC-FT	4840	330	2.6	1.2	229	990	.00	.00	5950	3430	14910	2960

CAL YR 1980 TOTAL 5430.60 MEAN 14.8 MAX 606 MIN .00 AC-FT 10770
WTR YR 1981 TOTAL 16960.26 MEAN 46.5 MAX 758 MIN .00 AC-FT 33640

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969, 1972-76, 1978 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: October 1970 to September 1976 (discontinued).

REMARKS.--No flow Oct. 7 to Nov. 17, Jan. 6 to Mar. 9, May 27 to June 2, July 14 to Sept. 30. Sediment-discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 20,300 mg/L May 9, 1972; minimum daily mean, 0 mg/L on many days most years.
SEDIMENT LOADS: Maximum daily, 420,000 tons (381,000 tonnes) May 10, 1975; minimum daily, 0 ton (0 tonne) on many days each year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
NOV										
12...	1130	6.4	990	8.2	5.0	--	11.6	--	K71	--
JAN										
06...	1025	.05	5420	7.9	1.0	21	11.7	K20	K25	610
MAR										
10...	1040	22	1251	8.7	2.0	460	11.6	K50	560	91
JUN										
30...	0935	40	1224	7.9	22.5	780	6.4	K1500	1900	210

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
NOV										
12...	--	--	--	--	--	--	--	--	--	--
JAN										
06...	0	150	56	1200	81	21	18	2200	990	75
MAR										
10...	0	23	8.2	290	87	13	5.4	380	290	10
JUN										
30...	76	58	15	190	65	5.8	9.8	480	130	7.2

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)
NOV										
12...	--	--	--	--	--	--	--	--	--	--
JAN										
06...	.9	11	4070	4310	5.5	.55	--	.04	.06	.090
MAR										
10...	.4	3.3	900	896	1.2	54.7	552	.19	.14	.050
JUN										
30...	.5	9.9	891	652	1.2	96.5	970	.72	.81	.060

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
NOV										
12...	--	--	--	--	--	--	--	--	--	--
JAN										
06...	.12	.080	1.8	1.9	1.9	.10	2.00	1.9	2.1	9.1
MAR										
10...	.06	.000	1.7	1.8	1.7	.10	1.80	1.9	1.9	8.6
JUN										
30...	.08	.120	1.4	6.4	1.5	5.0	6.50	2.2	7.3	32

K Non-ideal colony count.

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
NOV 12...	--	--	--	--	--	--	--	--	77000
JAN 06...	--	.050	.090	.28	--	35	--	--	--
MAR 10...	.000	.080	.050	.15	--	--	--	19	4500
JUN 30...	.140	.120	1.40	4.3	--	9.6	4.4	--	2000

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 12...	1130	6.4	--	--	--	--	--	--	--	--	--	--
JAN 06...	1025	.05	430	.06	--	--	--	--	64	76	100	--
MAR 10...	1040	22	1150	70	--	90	99	100	--	--	--	--
JUN 30...	0935	40	1940	210	100	--	96	98	100	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
JAN. 06...	1025	2	0	2	0	0	1	10	10	0	2
JUN. 30...	0935	10	8	2	0	0	0	60	50	10	12

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
JAN. 06...	40	140	1.1	.5	.6	6	1	5	20	0	20
JUN. 30...	350	10	1.3	.7	.6	0	0	0	150	140	10

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
JAN. 06...	1	1	13	6	7	310	70	2	0	2	180
JUN. 30...	12	0	53	43	10	37000	80	6	6	0	360

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 12,80	MAR 10,81	JUN 30,81
TIME	1130	1040	0935
TOTAL CELLS/ML	77000	4500	2000
DIVERSITY: DIVISION	1.2	1.1	1.4
.CLASS	1.2	1.1	1.4
..ORDER	1.4	2.0	1.6
...FAMILY	1.9	2.7	1.6
....GENUS	3.3	2.9	1.6

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	24000#	31	--	-	--	-
....CHODATELLA	530	1	--	-	--	-
....DICTYOSPHAERIUM	4200	6	1000#	23	--	-
....KIRCHNERIELLA	4200	6	--	-	--	-
....OOCYSTIS	5800	8	--	-	280	14
....SELENASTRUM	2600	3	--	-	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	2100	3	--	-	--	-
....CRUCIGENIA	2100	3	210	5	--	-
....SCENEDESMUS	6300	8	140	3	--	-
....TETRASTRUM	2100	3	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	530	1	1400#	31	140	7
...VOLVOCACEAE						
....PANDORINA	--	-	560	12	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	6900	9	280	6	420#	21
..PENNALES						
...NAVICULACEAE						
....NAVICULA	--	-	70	2	--	-
...NITZSCHIACEAE						
....NITZSCHIA	4200	6	140	3	--	-
...SURIRELLACEAE						
....SURIRELLA	--	-	140	3	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	9500	12	--	-	--	-
....COCCOCHLORIS	1100	1	--	-	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENOPSIS	--	-	--	-	1100#	57
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	530	1	350	8	--	-
....TRACHELOMONAS	--	-	210	5	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	1390		---		---			---	1300	---	1080
2	---	1390		---		---			---	---	---	1080
3	---	1400		---		---			---	---	---	1090
4	---	1380		---		---			---	---	---	1100
5	---	1390		---		---			---	---	---	---
6	---	1390		426		---			---	1520	---	---
7	---	1390		---		---			---	---	---	---
8	---	1390		---		---			---	---	---	1630
9	---	1390		---		---			---	---	---	440
10	---	1360		---		1250			---	---	---	540
11	---	1870		---		---			---	---	---	570
12	---	990		---		---			---	---	---	560
13	---	1680		---		---			---	---	---	510
14	---	1820		---		---			---	---	---	500
15	---	1930		---		---			---	---	---	520
16	620	---		---		---			---	---	---	---
17	580	---		---		---			---	---	---	560
18	630	2200		---		---			---	---	---	580
19	480	2230		---		---			---	---	---	600
20	625	2200		---		---			---	---	---	620
21	625	2360		---		---			---	---	---	630
22	460	2360		---		---			---	832	---	640
23	800	2360		---		---			---	---	---	660
24	1300	2300		---		---			---	---	---	650
25	1300	2380		---		---			---	---	---	640
26	1090	2300		---		---			---	---	700	650
27	1140	2330		---		---			---	---	870	660
28	860	3310		---		---			---	---	940	---
29	1300	2300		---		---			---	---	980	---
30	1390	2280		---		---			1220	---	1050	---
31	1390	---		---		---			---	---	1060	---
MEAN	911	1880		426		1250			1220	1220	933	718

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	2.0		---		---			---	---	---	
2	---	5.5		---		---			---	---	---	
3	---	6.0		---		---			---	---	---	
4	---	8.0		---		---			---	---	---	
5	---	8.5		---		---			---	---	---	
6	---	9.0		1.0		---			---	---	---	
7	---	12.0		---		---			---	---	---	
8	---	7.5		---		---			---	---	---	
9	---	5.0		---		---			---	---	---	
10	---	6.5		---		2.0			---	---	---	
11	---	5.5		---		---			---	---	---	
12	---	5.5		---		---			---	---	---	
13	---	3.5		---		---			---	---	---	
14	---	2.0		---		---			---	---	---	
15	---	3.0		---		---			---	---	---	
16	14.0	7.0		---		---			---	---	---	
17	12.5	12.0		---		---			---	---	---	
18	12.0	12.0		---		---			---	---	---	
19	11.5	11.0		---		---			---	---	---	
20	12.0	10.0		---		---			---	---	---	
21	9.0	7.0		---		---			---	---	---	
22	8.5	5.0		---		---			---	26.0	---	
23	8.0	5.0		---		---			---	---	---	
24	9.0	4.0		---		---			---	---	---	
25	7.0	2.0		---		---			---	---	---	
26	7.5	3.0		---		---			---	---	22.0	
27	7.0	5.0		---		---			---	---	---	
28	3.5	5.0		---		---			---	---	---	
29	1.5	3.0		---		---			---	---	---	
30	1.0	3.5		---		---			22.5	---	---	
31	2.5	---		---		---			---	---	---	
MEAN	8.0	6.0		1.0		2.0			22.5	26.0	22.0	

06360500 MOREAU RIVER NEAR WHITEHORSE, SD--Continued

```
             INITIAL DATE                                81/07/22
             INITIAL TIME-DEPTH-BOTTOM                   1345 0000
       00010  WATER       TEMP       CENT                25.0
       00011  WATER       TEMP       FAHN                77.0
       00020   AIR        TEMP       CENT                29.0
       00061  STREAM      FLOW,    INST-CFS               623
       00065  STREAM      STAGE      FEET              393.00
       00094 CNDUCTVY   FIELD     MICROMHO                837
       00299    DO        PROBE      MG/L                 5.3
       00301    DO        SATUR    PERCENT               63.1
       00400    PH                    SU                 7.50
```

Analyses by Corps of Engineers.
Tables from STORET.

06392900 BEAVER CREEK AT MALLO CAMP, NEAR FOUR CORNERS, WY

LOCATION.--Lat 44°05'04", long 104°03'41", in NE¼NE¼ sec.4, T.47 N., R.60 W., Weston County, Hydrologic Unit 10120107, between Forest Service Road 811 and right bank at Mallo Campgrounds, 300 ft (91 m) upstream from mouth, 800 ft (244 m) upstream from dam on Stockade Beaver Creek, and 3.8 mi (6.1 km) east of Four Corners.

DRAINAGE AREA.--10.3 mi² (26.7 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,030 ft (1,840 m), from topographic map.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--7 years, 1.92 ft³/s (0.054 m³/s), 1,390 acre-ft/yr (1.71 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21 ft³/s (0.59 m³/s) Apr. 26, 1975, gage height, 5.40 ft (1.646 m); minimum daily, 0.23 ft³/s (0.007 m³/s) Oct. 14, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3.3 ft³/s (0.093 m³/s) at 2230 hours, Sept. 5, gage height, 4.46 ft (1.359 m), no peak above base of 10 ft³/s (0.28 m³/s); maximum gage height, 5.67 ft (1.728 m) Nov. 19 (backwater from ice); minimum discharge, 1.2 ft³/s (0.034 m³/s) Feb. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	11	12	12	12	12	11	8.0	7.8	9.8	7.3	10
2	11	11	12	12	11	12	12	8.0	6.7	9.6	7.3	10
3	11	11	12	12	11	12	12	8.7	6.7	9.6	7.3	10
4	11	11	12	12	11	12	12	8.9	7.1	9.6	6.9	11
5	10	11	12	12	11	12	11	8.0	8.0	9.4	6.9	10
6	10	11	12	12	10	11	11	8.0	8.2	9.4	8.7	11
7	9.8	11	12	12	10	12	11	8.0	8.4	.91	10	11
8	9.6	11	12	12	10	12	9.8	7.6	9.8	8.9	9.8	11
9	2.3	11	12	12	10	12	10	7.6	11	8.9	10	11
10	2.3	11	12	11	9.0	12	9.8	7.3	12	8.0	10	11
11	2.3	11	12	11	9.5	12	9.8	7.3	11	6.9	9.8	10
12	2.3	11	12	12	9.5	12	10	7.3	11	6.7	9.6	10
13	2.3	11	12	12	10	12	9.6	7.3	11	8.4	10	10
14	2.3	11	12	12	10	12	11	7.1	11	7.3	10	10
15	2.6	11	12	12	11	12	10	6.9	11	7.1	11	10
16	2.5	11	12	12	11	12	8.8	6.9	11	6.9	11	10
17	12	11	12	12	11	12	8.7	6.9	11	6.9	11	10
18	12	11	12	12	12	12	9.1	6.9	11	7.1	11	10
19	12	11	11	12	12	12	8.7	6.9	11	6.7	10	10
20	11	11	10	12	12	12	8.7	7.1	11	7.8	10	10
21	11	11	10	12	12	12	8.4	7.1	11	9.4	10	10
22	11	11	11	12	12	12	8.4	7.8	11	9.4	10	9.2
23	11	11	11	12	12	12	8.2	7.6	11	9.8	10	7.8
24	11	11	11	12	12	12	8.2	7.3	10	8.2	10	7.8
25	11	11	11	12	12	12	8.4	7.3	10	8.2	10	7.8
26	11	11	12	12	12	12	8.4	7.3	10	8.4	10	7.3
27	11	11	12	12	12	13	7.8	7.6	10	8.0	10	7.6
28	11	11	12	12	12	12	8.0	7.8	10	8.0	10	7.6
29	11	11	12	12	---	12	8.0	7.8	10	7.8	10	7.6
30	11	11	12	12	---	11	8.0	7.8	10	7.6	10	7.8
31	11	---	12	12	---	11	---	7.8	---	7.3	10	---
TOTAL	269.3	330	363	370	309.0	370	285.8	233.9	298.7	248.01	297.6	286.5
MEAN	8.69	11.0	11.7	11.9	11.0	11.9	9.53	7.55	9.96	8.00	9.60	9.55
MAX	12	11	12	12	12	13	12	8.9	12	9.8	11	11
MIN	2.3	11	10	11	9.0	11	7.8	6.9	6.7	.91	6.9	7.3
AC-FT	534	655	720	734	613	734	567	464	592	492	590	568

CAL YR 1980 TOTAL 1676.70 MEAN 4.58 MAX 12 MIN 1.1 AC-FT 3330
WTR YR 1981 TOTAL 3661.81 MEAN 10.0 MAX 13 MIN .91 AC-FT 7260

BEST DOCUMENT AVAILABLE

06392950 STOCKADE BEAVER CREEK NEAR NEWCASTLE, WY

LOCATION.--Lat 43°51'30", long 104°06'23", in SW¼SE¼ sec.19, T.45 N., R.60 W., Weston County, Hydrologic Unit 10120107, on left bank at downstream side of bridge on county highway 0.6 mi (1.0 km) upstream from South Draw, 2.5 mi (4.0 km) upstream of LAK Reservoir Dam, and 4.7 mi (7.6 km) east of Newcastle.

DRAINAGE AREA.--107 mi^2 (277 km^2).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,455 ft (1,358 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. A few small diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--7 years, 12.2 ft^3/s (0.346 m^3/s), 8,840 acre-ft/yr (10.9 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 107 ft^3/s (3.03 m^3/s) June 16, 1977, gage height, 7.54 ft (2.298 m); maximum gage height, 7.91 ft (2.411 m) Jan. 12, 1975 (backwater from ice); minimum daily discharge, 6.0 ft^3/s (0.17 m^3/s) July 17, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 18.8 ft^3/s (0.53 m^3/s) at 2000 hours, Mar. 27, gage height, 6.57 ft (2.002 m), no peak above base of 50 ft^3/s (1.42 m^3/s); minimum daily discharge, 6.0 ft^3/s (0.17 m^3/s) July 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	11	12	12	12	12	11	8.0	7.8	9.8	7.3	10
2	11	11	12	12	11	12	12	8.0	6.7	9.6	7.3	10
3	11	11	12	12	11	12	12	8.7	6.7	9.6	7.3	10
4	11	11	12	12	11	12	12	8.9	7.1	9.6	6.9	11
5	10	11	12	12	11	12	11	8.0	8.0	9.4	6.9	10
6	10	11	12	12	10	11	11	8.0	8.2	9.4	8.7	11
7	9.8	11	12	12	10	12	11	8.0	8.4	9.1	10	11
8	9.6	11	12	12	10	12	9.8	7.6	9.8	8.9	9.8	11
9	9.6	11	12	12	10	12	10	7.6	11	8.9	10	11
10	9.4	11	12	11	9.0	12	9.8	7.3	12	8.0	10	11
11	10	11	12	11	9.5	12	9.8	7.3	11	6.9	9.8	10
12	11	11	12	12	9.5	12	10	7.3	11	6.7	9.6	10
13	11	11	12	12	10	12	9.6	7.3	11	8.4	10	10
14	11	11	12	12	10	12	11	7.1	11	7.3	10	10
15	13	11	12	12	11	12	10	6.9	11	7.1	11	10
16	12	11	12	12	11	12	8.8	6.9	11	6.9	11	10
17	12	11	12	12	11	12	8.7	6.9	11	6.0	11	10
18	12	11	12	12	12	12	9.1	6.9	11	7.1	11	10
19	12	11	11	12	12	12	8.7	6.9	11	6.7	10	10
20	11	11	10	12	12	12	8.7	7.1	11	7.8	10	10
21	11	11	10	12	12	12	8.4	7.1	11	9.4	10	10
22	11	11	11	12	12	12	8.4	7.8	11	9.4	10	9.2
23	11	11	11	12	12	12	8.2	7.6	11	9.8	10	7.8
24	11	11	11	12	12	12	8.2	7.3	10	8.2	10	7.8
25	11	11	11	12	12	12	8.4	7.3	10	8.2	10	7.8
26	11	11	12	12	12	12	8.4	7.3	10	8.4	10	7.3
27	11	11	12	12	12	13	7.8	7.6	10	8.0	10	7.6
28	11	11	12	12	12	12	8.0	7.8	10	8.6	10	7.6
29	11	11	12	12	---	12	8.0	7.8	10	7.8	10	7.6
30	11	11	12	12	---	11	8.0	7.8	10	7.6	10	7.8
31	11	---	12	12	---	11	---	7.8	---	7.3	10	---
TOTAL	337.4	330	363	370	309.0	370	285.8	233.9	298.7	255.3	297.6	286.5
MEAN	10.9	11.0	11.7	11.9	11.0	11.9	9.53	7.55	9.96	8.24	9.60	9.55
MAX	13	11	12	12	12	13	12	8.9	12	9.8	11	11
MIN	9.4	11	10	11	9.0	11	7.8	6.9	6.7	6.0	6.9	7.3
AC-FT	669	655	720	734	613	734	567	464	592	506	590	568

CAL YR 1980 TOTAL 4110.3 MEAN 11.2 MAX 19 MIN 7.1 AC-FT 8150
WTR YR 1981 TOTAL 3737.2 MEAN 10.2 MAX 13 MIN 6.0 AC-FT 7410

06395000 CHEYENNE RIVER AT EDGEMONT, SD

LOCATION.--Lat 43°18'20", long 103°49'14", in SW¼SE¼SE¼ sec.36, T.8 S., R.2 E., Fall River County, Hydrologic Unit 10120106, on right bank at downstream side of bridge on U.S. Highway 18, at Edgemont, 300 ft (91 m) downstream from Burlington Northern Railroad bridge and 600 ft (183 m) upstream from Cottonwood Creek.

DRAINAGE AREA.--7,143 mi² (18,500 km²).

PERIOD OF RECORD.--June 1903 to November 1906 (no winter records), April 1928 to February 1933, October 1946 to current year.

REVISED RECORDS.--WSP 1086: Drainage area. WSP 1116: 1947. WDR SD-78-1 1977.

GAGE.--Water-stage recorder. Datum of gage is 3,414.56 ft (1,040.758 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 1, 1906, nonrecording gage 20 ft (6 m) upstream at datum 0.7 ft (0.21 m) lower. Apr. 11, 1928, to Feb. 28, 1933, Oct. 4, 1946, to Oct. 23, 1947, and Jan. 11, 1961, to Apr. 24, 1963, nonrecording gage, and Oct. 24, 1947, to Jan. 10, 1961, and Apr. 25, 1963, to Sept. 30, 1972, water-stage recorder all at present site at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Many small reservoirs above station used for stock and irrigation water, total capacity, about 45,000 acre-ft (55.5 hm³). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--39 years, 99.7 ft³/s (2.824 m³/s), 72,230 acre-ft/yr (89.1 hm³/yr); median of yearly mean discharges, 72 ft³/s (2.04 m³/s), 52,000 acre-ft/yr (64 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 28,000 ft³/s (793 m³/s) May 20, 1978, gage height, 13.65 ft (4.161 m), present datum; no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 1920, reached a stage of 13.0 ft (3.96 m) and May 1, 1922, 14.0 ft (4.27 m), present datum, from floodmarks at railroad bridge.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 1,500 ft³/s (42.5 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
July 15	0310	*3010	85.2	*5.04	1.536	July 19	1030	2570	72.8	4.70	1.433

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.03	11	7.0	23	34	48	5.1	.95	16	3.3	121	7.3
2	.00	8.5	7.6	23	34	44	4.2	.94	15	4.4	68	6.8
3	.31	7.4	8.0	24	34	41	5.3	2.4	10	2.4	47	5.4
4	.19	9.3	8.6	25	33	36	6.4	8.1	8.5	.96	40	5.3
5	.14	10	9.0	27	32	34	4.6	9.7	7.2	.27	36	5.6
6	.32	10	8.6	28	32	32	5.3	18	44	.07	278	6.4
7	.23	8.2	8.2	27	32	30	4.5	24	46	.07	298	7.6
8	.02	8.0	8.2	28	32	30	3.3	19	25	.05	119	7.0
9	.25	6.7	8.2	29	30	28	3.1	17	16	.03	66	5.7
10	.10	6.4	8.6	27	27	24	2.9	11	10	.03	55	4.1
11	.00	6.2	9.0	28	29	22	2.8	8.5	7.1	.03	52	3.1
12	.11	6.0	9.4	28	32	18	2.8	7.6	6.4	.07	42	2.5
13	.38	5.8	9.4	30	34	17	2.2	6.5	55	4.3	36	1.9
14	.36	5.8	10	30	36	16	1.8	6.0	197	682	31	1.4
15	6.2	5.8	11	31	38	17	2.7	11	87	1070	29	1.1
16	6.7	6.0	12	30	38	17	2.1	17	38	164	30	.83
17	4.1	6.2	13	29	38	14	1.8	21	24	47	31	.60
18	13	6.2	13	29	38	13	1.6	12	19	25	49	.60
19	28	6.4	12	29	39	12	1.4	6.5	14	1250	88	.30
20	21	6.4	11	29	40	11	3.0	4.3	11	243	386	.15
21	17	6.6	10	29	40	15	3.3	3.3	9.1	127	111	.00
22	14	8.0	10	30	40	12	3.2	3.0	7.2	71	40	.00
23	11	8.0	11	31	43	9.0	2.4	3.0	5.8	38	28	.00
24	8.9	7.0	12	32	45	8.3	2.2	3.0	5.1	29	22	.00
25	9.3	7.2	13	33	47	7.1	1.8	2.7	3.9	28	18	.00
26	11	7.4	15	34	49	7.7	2.0	3.0	2.5	36	15	.00
27	8.6	7.2	17	34	50	7.4	1.7	4.0	2.1	871	15	.00
28	9.1	7.0	20	35	50	5.8	3.1	14	2.3	861	13	.00
29	10	7.2	22	35	---	5.7	2.3	25	1.5	883	11	.00
30	10	7.4	23	35	---	4.8	1.4	24	1.2	478	9.4	.00
31	11	---	23	35	---	4.8	---	19	---	389	7.6	---
TOTAL	201.34	219.3	367.8	917	1046	591.6	90.3	315.69	698.9	7327.98	2192.0	73.68
MEAN	6.49	7.31	11.9	29.6	37.4	19.1	3.01	10.2	23.3	236	70.7	2.46
MAX	28	11	23	35	50	48	6.4	25	197	1250	386	7.6
MIN	.00	5.8	7.0	23	27	4.8	1.4	.94	1.2	.03	7.6	.00
AC-FT	399	435	730	1820	2070	1170	179	626	1390	14540	4350	146

CAL YR 1980 TOTAL 16346.38 MEAN 44.7 MAX 1760 MIN .00 AC-FT 32420
WTR YR 1981 TOTAL 14041.59 MEAN 38.5 MAX 1250 MIN .00 AC-FT 27850

06400000 HAT CREEK NEAR EDGEMONT, SD

LOCATION.--Lat 43°14'24", long 103°35'16", in SW¼SE¼NE¼ sec.25, T.9 S., R.4 E., Fall River County, Hydrologic Unit 10120108, on right bank at upstream side of bridge on State Highway 71, 2.0 mi (3.2 km) upstream from mouth, 2.0 mi (3.2 km) west of Heppner, and 12.5 mi (20.1 km) southeast of Edgemont.

DRAINAGE AREA.--1,044 mi² (2,704 km²).

PERIOD OF RECORD.--April 1905 to September 1906, October 1950 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,295.71 ft (1,004.532 m) National Geodetic Vertical Datum of 1929. Nonrecording gage Apr. 8, 1905, to May 2, 1906, at site 0.6 mi (1.0 km) downstream and May 3 to July 7, 1906, at site 0.4 mi (0.6 km) upstream at different datum. Nov. 6, 1950, to May 1, 1951, and July 18 to Sept. 7, 1975, nonrecording gage and May 2, 1951, to July 17, 1975, recording gage, at site 0.4 mi (0.6 km) downstream at present datum.

REMARKS.--Records fair, except those for winter periods, which are poor. A few small diversions above station for irrigation. Lander ditch diverts water from Hat Creek 0.4 mi (0.6 km) upstream from gaging station for irrigating hay meadows downstream from station. Several observations of water temperature and specific conductance were made during the year. Results of discharge measurements, in cubic feet per second, of Lander ditch during water year 1981 are given herewith:

Oct. 6	0		Apr. 7	0		July 6	0
Nov. 17	0		May 4	0		Aug. 4	0
Jan. 6	0		June 1	0.22		Sept. 8	0
Mar. 3	0.22						

AVERAGE DISCHARGE.--32 years, 18.8 ft³/s (0.532 m³/s), 13,620 acre-ft/yr (16.8 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s), 8,700 acre-ft/yr (11 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,300 ft³/s (377 m³/s) June 16, 1967, gage height, 13.35 ft (4.069 m), from rating curve extended above 2,600 ft³/s (73.6 m³/s) on basis of slope-area measurement at 11.98 ft (3.652 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 80 ft³/s (2.27 m³/s) at 1515 hours, May 7, gage height. 9.21 ft (2.807 m), no peak above base of 1,000 ft³/s (28.3 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.50	.18	.11	.06	.00	.04	.00	.00	.00
2	.00	.00	.00	.50	.18	.11	.04	.00	.03	4.4	.00	.00
3	.00	.00	.00	.45	.18	.16	.02	.02	.04	1.1	.00	.00
4	.00	.00	.00	.50	.18	.16	.04	.04	13	.02	.00	.00
5	.00	.00	.00	.50	.16	.16	.03	.01	12	.00	.00	.00
6	.00	.00	.00	.64	.16	.16	.03	.06	1.6	.00	.00	.00
7	.00	.00	.00	.64	.16	.12	.02	12	.45	.00	.00	.00
8	.00	.00	.00	.64	.14	.09	.04	2.2	.12	.00	.00	.00
9	.00	.00	.00	.54	.06	.09	.07	1.0	.06	.00	.00	.00
10	.00	.00	.00	.45	.03	.09	.09	1.1	.12	.00	.00	.00
11	.00	.00	.00	.45	.04	.12	.15	1.8	.16	.00	.00	.00
12	.00	.00	.00	.45	.05	.12	.26	2.3	.16	.00	.00	.00
13	.00	.00	.00	.36	.08	.09	.17	2.5	.12	.00	.00	.00
14	.00	.00	.00	.28	.10	.12	.07	2.8	.06	.00	.00	.00
15	.00	.00	.00	.28	.10	.09	.06	2.8	.02	.00	.00	.00
16	.00	.00	.00	.26	.12	.09	.04	2.8	.00	.00	.00	.00
17	.00	.00	.64	.26	.11	.06	.00	3.2	.00	.00	.00	.00
18	.00	.00	.64	.28	.11	.04	.00	2.5	.00	.00	.00	.00
19	.00	.00	.92	.28	.11	.04	.00	2.0	.00	.00	.00	.00
20	.00	.00	.45	.28	.10	.06	.00	1.5	.00	.00	.00	.00
21	.00	.00	.36	.30	.10	.16	.00	1.3	.00	.00	.00	.00
22	.00	.00	.45	.32	.11	.12	.00	1.3	.00	.00	.00	.00
23	.00	.00	.40	.35	.12	.12	.00	1.1	.00	.00	.00	.00
24	.00	.00	.35	.34	.11	.04	.00	.92	.00	.00	.00	.00
25	.00	.00	.50	.33	.10	.06	.00	.73	.00	.00	.00	.00
26	.00	.00	.55	.33	.10	.06	.00	.54	.00	.00	.00	.00
27	.00	.00	.60	.32	.10	.06	.00	.45	.00	.00	.00	.00
28	.00	.00	.55	.28	.11	.09	.00	.28	.00	.00	.00	.00
29	.00	.00	.55	.21	---	.09	.00	.12	.00	.00	.00	.00
30	.00	.00	.55	.21	---	.06	.00	.06	.00	.00	.00	.00
31	.00	---	.55	.21	---	.06	---	.04	---	.00	.00	---
TOTAL	.00	.00	8.06	11.74	3.20	3.00	1.19	47.47	27.98	5.52	.00	.00
MEAN	.000	.000	.26	.38	.11	.097	.040	1.53	.93	.18	.000	.000
MAX	.00	.00	.92	.64	.18	.16	.26	12	13	4.4	.00	.00
MIN	.00	.00	.00	.21	.03	.04	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	16	23	6.3	6.0	2.4	94	55	11	.00	.00

CAL YR 1980 TOTAL 2332.23 MEAN 6.37 MAX 200 MIN .00 AC-FT 4630
WTR YR 1981 TOTAL 108.16 MEAN .30 MAX 13 MIN .00 AC-FT 215

06400497 CASCADE SPRINGS NEAR HOT SPRINGS, SD

LOCATION.--Lat 43°20'10", long 103°33'07", in SE¼SW¼ sec.20, T.8 S., R.5 E., Fall River County, Hydrologic Unit 10120106, on right bank near upstream end of culvert on State Highway 71, 3.3 mi (5.3 km) upstream from mouth, and 8.5 mi (13.7 km) southwest of Hot Springs.

PERIOD OF RECORD.--July 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,440 ft (1,049 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 19.8 ft^3/s (0.561 m^3/s) 14,350 acre-ft/yr (17.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 49 ft^3/s (1.39 m^3/s) July 4, 1977, gage height, 6.25 ft (1.905 m); minimum daily, 16 ft^3/s (0.45 m^3/s) Mar. 16, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 20 ft^3/s (0.57 m^3/s) Sept. 21, 24-30; minimum daily, 16 ft^3/s (0.45 m^3/s) Mar. 16.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	19	19	19	19	19	18	18	18	18	19	19
2	19	19	19	19	19	19	18	18	18	18	19	19
3	19	19	19	19	19	19	18	18	18	18	19	19
4	19	19	19	19	19	19	18	18	18	18	19	19
5	19	19	19	19	19	19	18	18	18	19	19	19
6	19	19	19	19	19	19	18	18	18	19	19	19
7	19	19	19	18	19	19	18	19	18	19	19	19
8	19	19	19	18	19	19	18	19	18	18	19	19
9	19	19	19	18	19	19	18	19	18	18	19	19
10	19	19	19	18	18	19	18	18	18	18	19	19
11	19	19	19	18	18	19	18	18	18	19	19	19
12	19	19	19	18	18	19	18	18	18	19	19	19
13	19	19	19	18	18	19	18	18	18	19	19	19
14	19	19	19	19	18	19	18	18	18	19	19	19
15	19	19	19	19	18	19	18	18	18	19	19	19
16	19	19	19	19	18	16	18	18	18	19	19	19
17	19	19	19	19	18	18	18	18	18	19	19	19
18	19	19	19	19	18	18	18	18	18	19	19	19
19	19	19	19	19	18	18	18	18	18	19	19	19
20	19	19	19	19	18	18	18	18	18	19	19	19
21	19	19	19	19	18	18	18	18	18	19	19	20
22	19	19	19	19	18	18	18	18	18	19	19	19
23	19	19	19	19	18	18	18	18	18	19	19	19
24	19	19	19	19	19	18	18	18	18	18	19	20
25	19	19	19	19	19	18	18	18	18	18	19	20
26	19	19	19	19	19	18	18	18	18	18	19	20
27	19	19	19	19	19	18	18	18	18	18	19	20
28	19	19	19	19	19	18	18	18	18	18	19	20
29	19	19	19	19	---	18	18	18	18	18	19	20
30	19	19	19	19	---	18	18	18	18	18	19	20
31	19	---	19	19	---	18	---	18	---	19	19	---
TOTAL	589	570	589	582	518	571	540	561	540	575	589	578
MEAN	19.0	19.0	19.0	18.8	18.5	18.4	18.0	18.1	18.0	18.5	19.0	19.3
MAX	19	19	19	19	19	19	18	19	18	19	19	20
MIN	19	19	19	18	18	16	18	18	18	18	19	19
AC-FT	1170	1130	1170	1150	1030	1130	1070	1110	1070	1140	1170	1150

CAL YR 1980 TOTAL 7294 MEAN 19.9 MAX 22 MIN 18 AC-FT 14470
WTR YR 1981 TOTAL 6802 MEAN 18.6 MAX 20 MIN 16 AC-FT 13490

06401000 ANGOSTURA RESERVOIR NEAR HOT SPRINGS, SD

LOCATION.--Lat 43°20'35", long 103°26'16", in SW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120106, at dam on Cheyenne River, 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi^2 (23,570 km^2), approximately.

PERIOD OF RECORD.--October 1949 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Aug. 26, 1965, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by concrete gravity dam with earth embankment with gated concrete gravity spillway section. Storage began Oct. 3, 1949; dam completed December 1949. Conservation capacity, 127,558 acre-ft (157 hm^3) between elevations 3,139.75 ft (956.996 m), invert of lowest outlet, and 3,187.2 ft (971.46 m), top of spillway gates. Dead storage below elevation 3,139.75 ft (956.996 m), 11,203 acre-ft (13.8 hm^3). From capacity table put into use Sept. 1, 1981: Conservation capacity, 82,443 acre-ft (102 hm^3). Dead storage, 8,598 acre-ft (10.6 hm^3). Figures given herein represent contents above elevation 3,139.75 ft (956.996 m). Water is stored for irrigation.

COOPERATION.--Records of elevations, contents, and diversion to Angostura project furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 145,200 acre-ft (179 hm^3) June 18, 1962, elevation, 3,189.00 ft (972.007 m); minimum observed since normal operating level reached, 45,350 acre-ft (55.9 hm^3) Sept. 28, 1960, elevation, 3,162.90 ft (964.052 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 95,164 acre-ft (117 hm^3) Apr. 11-19, elevation, 3,179.70 ft (969,173 m); minimum, 63,300 acre-ft (78.0 hm^3) Sept. 20, 27, 28, elevation, 3,171.67 ft (966.725 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents	†Diversions
Sept. 30	3176.80	84036		
Oct. 31	3176.95	84587	+551	
Nov. 30	3177.25	85713	+1126	
Dec. 30	3177.88	88088	+2375	
CAL YR 1980			-29095	
Jan. 31	3178.53	90586	+2498	
Feb. 28	3179.17	93071	+2485	
Mar. 31	3179.65	94967	+1896	
Apr. 30	3179.31	93624	-1343	1463
May 31	3178.94	92168	-1456	3137
June 30	3177.12	85223	-6945	6792
July 31	3176.20	81803	-3420	15152
Aug. 31	3173.55	72542	-9261	17274
Sept. 1	3173.55	*69937	-2605	
Sept. 30	3171.69	63361	-6576	8344
WTR YR 1981			-20675	52162

† Diversions from Angostura irrigation project.
* From capacity table put into use Sept. 1, 1981.

06401500 CHEYENNE RIVER BELOW ANGOSTURA DAM, SD

LOCATION.--Lat 43°20'42", long 103°26'12", in NE¼NW¼NW¼ sec.20, T.8 S., R.6 E., Fall River County, Hydrologic Unit 10120109, on right bank 800 ft (244 m) downstream from Angostura Dam, 4.8 mi (7.7 km) upstream from Fall River and 6.5 mi (10.5 km) southeast of Hot Springs.

DRAINAGE AREA.--9,100 mi² (23,600 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year, seasonal records only beginning October 1978. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1946(M). WDR SD-78-1: 1962(M), 1967(M), 1971(M).

GAGE.--Water-stage recorder. Datum of gage is 3,058.02 ft (932.084 m) National Goodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 17, 1946, nonrecording gage and Oct. 17, 1946, to July 7, 1953, water-stage recorder at site 4.8 mi (7.7 km) downstream at different datum.

REMARKS.--Records good. Flow regulated by Angostura Reservoir 800 ft (244 m) upstream since October 1949 (see station 06401000).

AVERAGE DISCHARGE.--33 years (water years 1945-78), 78.5 ft³/s (2.223 m³/s), 56,870 acre-ft/yr (70.1 hm³/yr); median of yearly mean discharges, 52 ft³/s (1.47 m³/s), 37,700 acre-ft/yr (46 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,300 ft³/s (858 m³/s) May 20, 1978, gage height, 15.97 ft (4.868 m), from rating curve extended above 12,000 ft³/s (340 m³/s); no flow Oct. 9, 1949, to Feb. 5, 1950, Apr. 28, Aug. 26, 30, 1951.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge, 3.6 ft³/s (0.10 m³/s) at 0500 hours, Mar. 2, gage height, 2.85 ft (0.869 m); maximum gage height, 3.27 ft (0.997 m) July 23 (backwater from debris); minimum daily, 1.3 ft³/s (0.037 m³/s) Apr. 18, July 20, 21, 30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1					2.9	3.2	2.0	1.5	2.2	1.8	1.6	
2					2.9	3.2	2.0	1.4	2.2	1.9	1.6	
3					2.9	3.2	2.3	1.6	2.2	1.8	1.6	
4					2.9	3.0	2.0	1.7	2.1	1.7	---	
5					2.9	3.0	1.9	1.5	2.2	1.6	---	
6					2.9	3.2	1.8	2.3	2.1	1.6	---	
7					2.9	3.1	2.0	2.0	2.2	1.4	---	
8					2.9	3.0	1.9	1.8	2.2	1.5	---	
9					2.9	3.0	1.8	1.9	2.4	1.6	---	
10					2.9	2.9	1.8	1.9	2.4	1.5	---	
11					2.9	2.8	1.8	1.9	2.2	1.5	---	
12					2.9	2.8	1.7	2.0	2.3	1.6	---	
13					2.9	2.8	1.8	2.1	2.2	1.8	---	
14					2.9	2.8	1.8	1.7	2.4	1.7	---	
15					2.9	2.8	1.7	1.6	2.4	1.6	---	
16					2.9	2.7	1.5	1.8	2.3	1.6	---	
17					2.9	2.9	1.6	2.3	2.2	1.6	---	
18					2.9	2.8	1.3	2.2	2.4	1.5	---	
19					2.9	2.8	1.5	2.4	2.4	1.4	---	
20					2.9	2.9	1.5	2.2	2.3	1.3	---	
21					3.1	3.0	1.4	2.1	2.0	1.3	---	
22					3.0	2.5	1.6	2.1	2.1	1.4	---	
23					3.0	2.5	1.5	2.2	2.0	1.7	---	
24					3.1	2.3	1.5	2.1	2.1	1.6	---	
25					3.2	2.2	1.4	2.1	2.1	1.9	---	
26					3.2	2.2	1.4	2.2	1.9	1.8	---	
27					3.2	2.2	1.5	2.1	1.8	1.8	---	
28					3.2	2.3	1.5	2.2	2.0	1.6	---	
29					---	2.2	1.4	2.2	1.9	1.5	---	
30					---	2.2	1.5	2.2	1.9	1.3	---	
31					---	2.2	---	2.1	---	1.5	---	
TOTAL					83.0	84.7	50.4	61.4	65.1	49.4	---	
MEAN					2.96	2.73	1.68	1.98	2.17	1.59	---	
MAX					3.2	3.2	2.3	2.4	2.4	1.9	---	
MIN					2.9	2.2	1.3	1.4	1.8	1.3	---	
AC-FT					165	168	100	122	129	98	---	

06402000 FALL RIVER AT HOT SPRINGS, SD

LOCATION.--Lat 43°25'50", long 103°28'33", in NW¼NW¼ sec.24, T.7 S., R.5 E., Fall River County, Hydrologic Unit 10120109, on left bank at intersection of River Street and University Avenue in Hot Springs and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--137 mi² (355 km²).

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October 1937, published in WSP 1309.

REVISED RECORDS.--WSP 1279: 1938, 1941(M), 1947(M). WSP 1729: 1959(M).

GAGE.--Water-stage recorder. Datum of gage is 3,413.20 ft (1,040.343 m) National Geodetic Vertical Datum of 1929. Prior to June 2, 1939, nonrecording gage at site 300 ft (91 m) upstream at datum 3.00 ft (0.914 m) higher.

REMARKS.--Records good. Flow regulated by Coldbrook Reservoir, capacity, 7,200 acre-ft (8.88 hm³), beginning September 1952, and Cottonwood Springs Lake, capacity, 8,385 acre-ft (10.3 hm³) since June 1969. Some diversion above station for municipal supply of Hot Springs. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--44 years, 25.1 ft³/s (0.711 m³/s), 18,180 acre-ft/yr (22.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,100 ft³/s (371 m³/s) Sept. 4, 1938, gage height, 18.4 ft (5.61 m), site and datum then in use, from rating curve extended above 51 ft³/s (1.44 m³/s) on basis of weir formula and slope-area measurement of peak flow; minimum, 4.0 ft³/s (0.11 m³/s) Sept. 23, 1940.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 293 ft³/s (8.30 m³/s) at 1930 hours, July 23, gage height, 2.92 ft (0.890 m); minimum daily, 16 ft³/s (0.45 m³/s) June 25-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19	21	22	22	21	21	21	19	20	17	21	21
2	20	22	22	21	21	21	21	20	20	17	21	22
3	20	21	22	21	20	21	21	21	20	20	21	22
4	20	21	23	22	21	22	22	20	18	19	22	21
5	19	23	22	22	21	22	21	20	18	19	21	24
6	20	21	23	22	21	22	21	28	18	18	22	24
7	20	20	22	22	20	22	21	23	18	19	22	22
8	20	22	23	21	20	21	21	19	19	19	23	22
9	21	22	22	23	21	21	21	19	19	18	25	22
10	20	21	22	23	20	21	20	19	19	18	24	22
11	21	22	22	23	20	21	20	19	19	18	24	23
12	23	23	23	22	21	21	21	19	19	18	23	24
13	21	21	23	22	21	20	21	19	18	19	24	23
14	23	23	23	22	21	20	22	19	18	19	24	21
15	32	22	22	20	21	20	21	20	18	19	24	23
16	23	21	23	20	21	20	21	21	18	19	25	22
17	23	21	19	21	20	20	21	23	17	19	24	22
18	24	22	20	21	20	19	21	20	17	21	24	22
19	23	21	19	21	20	19	21	20	17	20	23	21
20	25	21	21	20	20	20	21	20	17	20	22	22
21	23	20	19	21	20	21	21	19	17	20	20	22
22	23	21	20	20	20	21	20	19	17	21	22	22
23	23	21	19	20	20	20	19	20	17	26	24	21
24	21	21	22	20	20	20	19	20	17	20	22	22
25	22	21	22	21	20	20	20	19	16	25	22	21
26	24	20	22	20	20	20	20	20	16	22	22	21
27	23	23	20	21	20	21	19	20	16	22	24	22
28	23	21	22	20	20	21	19	20	18	22	24	21
29	22	22	21	21	---	22	19	20	18	22	22	19
30	23	21	22	21	---	24	19	20	18	21	22	21
31	23	---	21	21	---	22	---	20	---	22	23	---
TOTAL	687	642	668	657	571	646	615	625	537	619	706	657
MEAN	22.2	21.4	21.5	21.2	20.4	20.8	20.5	20.2	17.9	20.0	22.8	21.9
MAX	32	23	23	23	21	24	22	28	20	26	25	24
MIN	19	20	19	20	20	19	19	19	16	17	20	19
AC-FT	1360	1270	1320	1300	1130	1280	1220	1240	1070	1230	1400	1300

CAL YR 1980 TOTAL 7734 MEAN 21.1 MAX 32 MIN 16 AC-FT 15340
WTR YR 1981 TOTAL 7630 MEAN 20.9 MAX 32 MIN 16 AC-FT 15130

06402500 BEAVER CREEK NEAR BUFFALO GAP, SD

LOCATION.--Lat 43°27'56", long 103°18'22", in SE¼SE¼ sec.5, T.7 S., R.7 E., Fall River County, Hydrologic Unit 10120109, on left bank 1.5 mi (2.4 km) south of Buffalo Gap and 4.5 mi (7.2 km) upstream from mouth.

DRAINAGE AREA.--130 mi² (340 km²), approximately.

PERIOD OF RECORD.--October 1937 to current year. Monthly discharge only for October, November, 1937, published in WSP 1309.

REVISED RECORDS.--WSP 956: 1941. WSP 1309: 1939-40(M), 1947(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,150 ft (960 m), from topographic map. Prior to June 20, 1939, nonrecording gage at site 0.8 mi (1.3 km) downstream at different datum.

REMARKS.--Records good. Nearly all flow is diverted above station during irrigation season. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--44 years, 7.01 ft³/s (0.199 m³/s), 5,080 acre-ft/yr (6.26 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 11,700 ft³/s (331 m³/s) Sept. 4, 1938, gage height, 16.46 ft (5.017 m), site and datum then in use, from rating curve extended above 11 ft³/s (0.31 m³/s) on basis of slope-area measurement of peak flow; no flow at times in some years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in 1927 reached a stage of 18.0 ft (5.49 m), former site and datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 14 ft³/s (0.40 m³/s) at 0700 hours, Oct. 20, gage height, 4.91 ft (1.497 m), no peak above base of 24 ft³/s (0.68 m³/s); no flow Oct. 13, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.2	9.1	12	7.4	10	9.5	3.9	1.1	3.5	1.7	11	9.4
2	.50	9.1	12	7.5	9.5	9.7	1.4	1.5	1.2	2.4	11	9.8
3	.47	9.0	12	7.8	10	9.7	1.3	2.5	1.2	2.1	11	9.9
4	.44	8.7	12	8.0	10	9.4	1.2	2.8	2.5	1.9	11	10
5	.42	9.1	10	8.3	10	9.2	1.1	1.2	3.5	1.7	11	10
6	.41	8.9	9.2	7.7	10	9.3	1.0	1.7	4.5	1.4	10	10
7	.39	8.7	9.1	7.8	10	9.2	.98	4.3	4.9	1.3	9.9	11
8	.36	8.9	8.9	8.1	10	9.1	.93	5.7	4.9	1.2	9.9	10
9	.38	10	8.9	8.3	9.9	8.8	1.1	5.0	4.9	1.2	11	10
10	.32	11	8.9	9.1	9.2	7.8	1.3	5.0	4.9	1.3	11	9.8
11	.10	11	9.0	9.5	11	7.5	1.3	5.0	4.8	1.5	11	9.7
12	.01	11	9.0	9.4	13	7.3	1.0	3.0	4.8	1.5	11	9.7
13	.00	12	8.6	9.5	13	7.6	.98	1.3	4.4	1.6	9.3	9.5
14	.00	12	8.6	9.6	11	7.4	.98	1.9	4.4	1.3	6.0	9.4
15	.11	12	8.5	9.7	9.9	7.5	.94	3.8	4.6	.59	6.1	9.4
16	.25	12	8.5	9.8	9.7	7.4	1.1	4.1	3.6	.52	6.0	9.4
17	.79	12	8.5	10	9.9	7.5	1.1	6.9	2.4	.48	4.6	9.1
18	.78	12	8.5	10	9.9	7.3	1.0	8.2	3.1	.49	2.6	5.8
19	5.8	12	8.6	10	9.8	7.3	.98	7.2	3.6	.53	2.3	5.6
20	13	12	8.6	10	9.7	6.7	1.1	7.0	3.4	.36	2.2	5.9
21	13	12	8.5	10	9.7	6.6	1.0	6.9	1.1	.31	2.1	5.9
22	10	12	8.5	10	9.8	6.5	1.1	5.3	.91	.68	2.2	4.2
23	7.2	12	8.6	10	9.8	6.2	1.0	5.2	1.7	6.6	2.2	1.9
24	7.1	11	8.3	10	9.7	6.1	1.1	5.0	3.7	13	4.7	1.7
25	7.1	12	8.6	10	9.7	5.8	1.1	4.8	3.9	12	6.0	1.7
26	7.1	12	8.5	9.9	9.8	5.8	1.2	4.8	3.1	13	5.3	1.6
27	7.7	12	8.2	10	9.8	6.0	1.2	5.2	2.8	12	6.7	1.5
28	9.4	12	7.9	10	9.6	5.9	1.2	4.8	2.5	12	7.3	1.4
29	9.4	12	8.1	10	---	5.8	1.1	4.8	2.4	11	8.3	1.2
30	9.4	12	8.1	10	---	5.8	1.1	4.8	1.9	11	8.6	1.2
31	9.0	---	8.1	10	---	5.6	---	4.8	---	11	8.6	---
TOTAL	122.13	329.5	280.8	287.4	283.4	231.3	35.79	135.6	99.11	127.66	230.1	205.7
MEAN	3.94	11.0	9.06	9.27	10.1	7.46	1.19	4.37	3.30	4.12	7.42	6.86
MAX	13	12	12	10	13	9.7	3.9	8.2	4.9	13	11	11
MIN	.00	8.7	7.9	7.4	9.2	5.6	.93	1.1	.91	.31	2.1	1.2
AC-FT	242	654	557	570	562	459	71	269	197	253	456	408

CAL YR 1980 TOTAL 2052.33 MEAN 5.61 MAX 13 MIN .00 AC-FT 4070
WTR YR 1981 TOTAL 2368.49 MEAN 6.49 MAX 13 MIN .00 AC-FT 4700

06404000 BATTLE CREEK NEAR KEYSTONE, SD

LOCATION.--Lat 43°52'21", long 103°20'10", in SW¼SW¼ sec.18, T.2 S., R.7 E., Pennington County, Hydrologic Unit 10120109, at right downstream end county highway bridge, 0.6 mi (1.0 km) downstream from Iron Creek and 4.5 mi (7.2 km) southeast of Keystone.

DRAINAGE AREA.--66 mi² (171 km²).

PERIOD OF RECORD.--July 1945 to July 1947, October 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,800 ft (1,160 m), from topographic map. Prior to Nov. 13, 1961, nonrecording gage at site 250 ft (76 m) downstream at different datum and Nov. 13 to Dec. 5, 1961, at same site at present datum. Dec. 6, 1961, to June 9, 1972, water-stage recorder at site 210 ft (64 m) downstream at present datum (destroyed by flood); June 10 to Nov. 20, 1972, nonrecording gage 180 ft (55 m) downstream at present datum; Nov. 21, 1972, to Nov. 27, 1973, water-stage recorder at present site and datum; Nov. 28, 1973, to Nov. 7, 1974, nonrecording gage 180 ft (55 m) downstream at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years (water years 1946, 1962-81), 9.57 ft³/s (0.271 m³/s), 6,930 acre-ft/yr (8.54 hm³/yr); median of yearly mean discharges, 7.9 ft³/s (0.22 m³/s), 5,700 acre-ft/yr (7.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 26,200 ft³/s (742 m³/s) June 9, 1972, gage height, 14.5 ft (4.42 m), from floodmarks, site then in use, from rating curve extended above 550 ft³/s (15.6 m³/s) on basis of slope-area measurement of peak flow; no flow for many days in 1961, 1962, 1970, 1974, 1976, 1980, 1981.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 100 ft³/s (2.83 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 17	2230	*763	21.6	*5.60	1.707	May 27	1345	112	3.17	4.18	1.274

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1960 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.5	1.3	1.7	.66	.77	1.8	.59	13	2.0	5.0	1.0
2	.00	1.3	1.8	1.5	.64	.95	1.9	.56	13	1.9	4.1	.97
3	.00	1.3	2.0	1.5	.68	1.0	2.0	1.0	12	2.0	3.7	1.1
4	.00	1.3	2.1	1.5	.33	.93	2.1	2.3	11	1.9	3.3	.69
5	.00	1.2	2.1	1.4	.32	.93	2.1	2.6	9.4	1.7	4.1	.58
6	.00	1.2	2.1	1.4	.33	.94	2.0	4.9	8.3	1.3	4.8	.60
7	.00	1.3	2.1	1.4	.32	1.1	1.9	25	7.5	.86	3.7	.70
8	.00	1.5	1.8	1.0	.30	1.3	1.8	18	7.1	.59	2.7	.60
9	.00	1.5	1.9	1.1	.27	1.1	1.7	9.0	9.8	.44	2.7	.50
10	.00	1.3	1.9	1.1	.22	1.0	1.6	6.9	9.0	.51	4.3	.40
11	.00	1.3	1.9	1.2	.26	1.1	1.6	5.6	7.1	.51	4.2	.30
12	.00	1.3	2.3	.85	.34	1.3	1.6	5.2	6.8	.46	3.1	.10
13	.00	1.5	2.7	.80	.60	1.2	1.5	5.3	6.8	2.0	6.0	.00
14	.00	1.6	2.2	.78	.76	1.3	1.4	5.0	6.4	2.7	5.7	.00
15	10	1.6	3.1	.76	.74	1.4	1.3	4.5	6.2	3.5	4.3	.00
16	12	1.6	3.8	.72	.69	1.7	1.2	9.5	5.4	3.8	4.1	.00
17	5.5	1.3	3.2	.74	.91	1.6	1.1	359	4.7	2.9	4.3	.00
18	4.0	1.1	2.6	.72	1.4	1.4	1.1	364	4.1	3.4	3.8	.00
19	3.1	1.4	2.4	.73	.76	1.6	1.1	130	4.1	3.3	3.4	.00
20	2.7	1.3	2.3	.70	.82	1.5	1.2	85	4.2	1.7	3.0	.00
21	2.2	1.3	2.2	.70	1.0	1.7	1.8	61	4.3	1.4	3.3	.00
22	2.0	1.3	1.9	.65	.82	2.0	2.0	48	3.9	2.7	3.4	.00
23	1.9	1.4	1.8	.69	.70	2.1	1.9	42	3.3	3.4	2.8	.00
24	1.9	.78	2.0	.74	.76	2.0	1.5	35	3.0	3.2	2.6	.00
25	1.8	.97	2.6	.74	.78	1.9	1.2	28	2.7	7.5	2.5	.00
26	1.8	1.1	2.7	.72	.82	1.8	.98	24	2.4	19	2.3	.00
27	1.8	.95	2.7	.72	1.0	1.8	.83	28	2.4	16	2.0	.00
28	1.8	1.2	2.7	.70	.87	1.9	.93	25	2.4	12	2.3	.00
29	1.6	1.4	2.4	.68	---	1.9	.80	19	2.3	9.2	1.9	.00
30	1.6	1.8	2.1	.70	---	1.8	.70	17	2.2	6.8	1.6	.00
31	1.6	---	2.1	.68	---	1.7	---	16	---	6.0	1.4	---
TOTAL	57.30	39.60	70.8	29.32	18.10	44.72	44.64	1386.95	184.8	124.67	106.4	7.54
MEAN	1.85	1.32	2.28	.95	.65	1.44	1.49	44.7	6.16	4.02	3.43	.25
MAX	12	1.8	3.8	1.7	1.4	2.1	2.1	364	13	19	6.0	1.1
MIN	.00	.78	1.3	.65	.22	.77	.70	.56	2.2	.44	1.4	.00
AC-FT	114	79	140	58	36	89	89	2750	367	247	211	15

CAL YR 1980 TOTAL 886.67 MEAN 2.42 MAX 14 MIN .00 AC-FT 1760
WTR YR 1981 TOTAL 2114.84 MEAN 5.79 MAX 364 MIN .00 AC-FT 4190

06404998 GRACE COOLIDGE CREEK NEAR GAME LODGE, NEAR CUSTER, SD

LOCATION.--Lat 43°45'40", long 103°21'49", in SW¼NE¼ sec.26, T.3 S., R.6 E., Custer County, Hydrologic Unit 10120109, on right bank 0.3 mi (0.5 km) downstream from bridge on U.S. Highway 16A, 0.9 mi (1.5 km) east of Game Lodge, 1.5 mi (2.4 km) southwest of junction of State Highway 36 and U.S. Highway 16A, and 11.5 mi (18.5 km) east of Custer.

DRAINAGE AREA.--25.2 mi² (65.3 km²).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 4,100 ft (1,250 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Considerable losses in sinkholes downstream from gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 3.23 ft³/s (0.091 m³/s), 2,340 acre-ft/yr (2.88 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 370 ft³/s (10.5 m³/s) May 18, 1981, gage height, 9.49 ft (2.893 m); maximum gage height, 12.76 ft (3.889 m) Feb. 9, 1979 (backwater from ice); no flow June 5-9, July 6, 8, 11, 19, 1977, for part of June 14, 1979.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 10, 1972, reached a stage of 10.35 ft (3.155 m), from floodmarks, discharge, 709 ft³/s (20.1 m³/s) from slope-area measurement of peak flow.

Flood of June 15, 1976, reached a stage of 10.90 ft (3.322 m), from floodmarks, discharge, 980 ft³/s (27.8 m³/s) on basis of slope-area measurement of 10.35 ft.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 25 ft³/s (0.71 m³/s) and maximum (*):

Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft³/s)	Discharge (m³/s)	Gage height (ft)	Gage height (m)
May 18	0100	*370	10.5	*9.49	2.893	Aug. 15	1600	38	1.076	7.74	2.359

Minimum daily discharge, 0.40 ft³/s (0.011 m³/s) Oct. 1, Feb. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.40	.82	.86	1.1	.72	.62	.66	.45	9.2	2.2	4.0	2.1
2	.45	.98	.90	1.0	.68	.62	.58	.45	8.6	2.1	3.8	2.0
3	.58	.90	1.0	1.0	.70	.64	.66	.50	9.7	2.1	3.4	1.8
4	.50	.82	1.1	1.1	.74	.67	.74	1.2	12	2.0	3.0	2.0
5	.50	.82	1.1	1.2	.80	.67	.74	1.2	7.5	1.8	3.4	2.0
6	.50	.82	1.0	1.2	.70	.62	.74	2.3	6.8	1.5	3.3	2.0
7	.58	.82	.95	1.2	.60	.66	.74	5.8	6.0	1.4	2.8	2.0
8	.58	.74	.90	1.1	.52	.66	.74	4.0	5.5	1.2	3.1	2.0
9	.58	.82	.94	1.0	.45	.62	.74	3.1	6.2	1.1	3.3	1.8
10	.50	.82	.96	1.0	.40	.58	.74	2.7	5.8	.98	3.8	1.7
11	.50	.74	.96	1.0	.45	.58	.74	2.4	4.8	.90	3.5	1.8
12	.50	.82	1.0	1.0	.55	.54	.50	2.3	4.7	1.1	2.8	1.7
13	.74	.90	1.0	1.0	.80	.52	.45	2.3	4.7	1.7	4.7	1.4
14	1.0	.90	1.1	1.0	1.0	.50	.50	2.2	4.4	2.2	4.7	1.4
15	1.3	.90	1.1	.96	1.2	.50	.50	2.1	4.0	3.2	7.2	1.5
16	1.5	.90	1.1	.92	1.8	.50	.50	5.7	3.8	2.7	7.8	1.5
17	1.1	.82	1.1	.88	1.4	.50	.50	155	3.5	2.4	6.0	1.5
18	.98	.84	1.0	.82	1.1	.50	.50	232	3.3	1.8	4.8	1.3
19	.98	.87	1.0	.84	.82	.50	.50	79	3.2	1.7	4.2	1.3
20	.98	.85	1.0	.90	.74	.50	.66	59	3.3	1.5	4.0	1.2
21	.98	1.0	1.0	.90	.73	.50	.90	47	3.5	2.1	3.6	1.2
22	.98	1.0	1.1	.85	.70	.50	.90	37	3.4	4.8	3.6	1.1
23	.98	1.0	1.1	.90	.68	.74	.90	32	3.1	3.6	3.6	1.1
24	.90	.95	1.0	.90	.68	.74	.66	26	3.0	3.0	3.5	1.1
25	.82	.90	1.1	.85	.68	.66	.58	23	2.7	5.2	3.3	1.1
26	.82	.95	1.2	.80	.66	.66	.50	20	2.6	7.8	3.2	1.1
27	.74	.90	1.2	.85	.64	.74	.50	19	2.5	9.2	3.1	1.1
28	.74	.95	1.2	.85	.62	.74	.58	17	2.5	7.0	2.7	1.1
29	.82	1.0	1.1	.85	---	.66	.50	14	2.4	5.5	2.6	.98
30	.82	.95	1.2	.80	---	.66	.45	12	2.4	4.4	2.4	.98
31	.82	---	1.2	.76	---	.66	---	10	---	5.0	2.2	---
TOTAL	24.17	26.50	32.47	29.53	21.56	18.76	18.90	820.70	145.1	93.18	117.4	44.86
MEAN	.78	.88	1.05	.95	.77	.61	.63	26.5	4.84	3.01	3.79	1.50
MAX	1.5	1.0	1.2	1.2	1.8	.74	.90	232	12	9.2	7.8	2.1
MIN	.40	.74	.86	.76	.40	.50	.45	.45	2.4	.90	2.2	.98
AC-FT	48	53	64	59	43	37	37	1630	288	185	233	89

CAL YR 1980 TOTAL 343.50 MEAN .94 MAX 3.4 MIN .25 AC-FT 681
WTR YR 1981 TOTAL 1393.13 MEAN 3.82 MAX 232 MIN .40 AC-FT 2760

06406000 BATTLE CREEK AT HERMOSA, SD

LOCATION.--Lat 43°49'41", long 103°11'44", in NE¼SW¼SW¼ sec.32, T.2 S., R.8 E., Custer County, Hydrologic Unit 10120109, on right bank 50 ft (15 m) downstream from Chicago and North Western Transportation Company bridge, 0.8 mi (1.3 km) south of Hermosa and 2.9 mi (4.7 km) downstream from Grace Coolidge Creek.

DRAINAGE AREA.--178 mi² (461 km²).

PERIOD OF RECORD.--August to December 1903 (gage heights only), July 1949 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,290 ft (1,000 m), from topographic map. Nonrecording gage, August to December 1903, at site 50 ft (15 m) upstream, July 7, 1949, to Nov. 2, 1950, at site 0.5 mi (0.8 km) upstream, Nov. 3, 1950, to Dec. 6, 1961, at site 170 ft (52 m) downstream, all at different datum. Dec. 7, 1961, to June 10, 1972, water-stage recorder (destroyed by flood), and June 11, 1972, to Aug. 28, 1972, nonrecording gage at site 80 ft (24 m) downstream at present datum.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--32 years, 9.20 ft³/s (0.260 m³/s), 6,670 acre-ft/yr (8.22 hm³/yr); median of yearly mean discharges, 5.9 ft³/s (0.17 m³/s), 4,270 acre-ft/yr (5.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,400 ft³/s (606 m³/s) June 10, 1972, gage height, 17.72 ft (5.401 m), from floodmarks, from rating curve extended above 2,800 ft³/s (79.3 m³/s) on basis of contracted-opening and flow-over-railroad embankment measurement of peak flow; no flow at times in 1954-57, 1959.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 689 ft³/s (19.5 m³/s) at 1045 hours, May 18, gage height, 7.97 ft (2.429 m), no peak above base of 150 ft³/s (4.25 m³/s); minimum daily discharge, 0.40 ft³/s (0.011 m³/s) Oct. 20, 21. The figure published in the 1980 report was in error; the correct figure is maximum discharge, 14 ft³/s (0.40 m³/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	3.0	3.2	2.9	2.3	2.7	2.4	1.2	8.7	1.3	3.3	.98
2	1.7	3.1	2.9	3.3	2.0	2.6	2.4	1.1	8.0	1.9	3.2	1.1
3	1.9	2.7	3.3	3.0	2.3	2.7	2.4	1.1	7.3	2.0	3.0	1.3
4	2.4	2.8	3.3	3.0	2.1	2.6	2.5	1.8	7.7	1.9	2.7	1.3
5	2.5	3.0	3.3	3.0	2.2	2.5	2.5	1.7	6.8	2.7	3.0	1.6
6	2.0	3.0	3.2	2.9	2.0	2.5	2.4	1.9	6.5	1.8	2.4	1.9
7	1.5	2.9	3.1	3.0	2.1	2.7	2.4	3.0	6.1	1.1	2.2	2.4
8	1.5	2.9	2.8	2.8	2.0	2.8	2.2	2.1	6.1	.42	2.0	2.4
9	1.5	2.8	3.3	3.0	2.1	2.7	1.8	1.8	4.6	1.4	1.8	2.2
10	1.7	3.0	3.1	3.0	2.1	2.8	1.8	1.6	4.4	2.5	3.3	2.0
11	1.9	3.0	3.3	3.6	2.1	2.7	1.8	1.5	4.8	2.4	2.7	1.9
12	2.2	3.2	3.5	3.1	2.2	2.8	1.9	1.4	3.7	2.4	1.4	1.8
13	2.3	3.2	3.3	3.2	2.3	2.5	1.8	1.6	3.9	5.2	2.6	1.7
14	2.6	3.0	3.2	2.9	2.3	2.7	1.6	1.7	3.5	2.2	2.5	1.4
15	6.3	3.2	2.8	2.7	2.3	2.5	1.8	1.5	3.5	1.8	2.6	1.8
16	2.1	3.3	2.8	2.7	2.2	2.7	1.6	1.6	3.2	3.2	3.0	1.9
17	.93	3.3	2.5	2.5	2.2	2.7	1.6	138	3.2	2.2	2.9	2.0
18	.71	3.5	2.5	3.1	2.2	2.8	1.8	503	3.0	1.8	2.7	2.2
19	.66	3.2	2.5	2.8	2.3	2.8	1.8	169	3.0	1.9	2.7	2.1
20	.40	3.2	2.5	2.5	2.4	2.8	1.8	80	5.6	1.9	2.4	2.0
21	.40	3.1	2.5	2.5	2.4	3.0	2.1	55	5.9	2.5	2.1	1.9
22	.48	2.9	2.9	2.7	2.5	2.7	2.2	41	5.4	4.4	1.9	2.0
23	.70	2.8	3.2	2.6	2.5	2.7	1.9	34	5.4	2.4	1.2	2.1
24	1.2	2.8	3.0	2.5	2.5	2.7	1.8	27	5.0	2.7	1.2	2.3
25	1.4	2.8	3.2	2.3	2.6	2.5	1.8	20	5.2	4.8	1.1	2.9
26	1.4	2.9	3.5	2.3	2.7	2.5	1.5	13	4.4	6.1	1.1	2.6
27	1.7	2.8	3.4	2.2	2.6	2.4	1.5	24	2.5	6.3	1.4	2.7
28	1.8	2.8	3.1	2.3	2.6	2.7	1.4	24	2.2	6.3	1.3	2.5
29	2.1	2.8	2.8	2.5	---	2.5	1.6	15	2.5	5.0	1.4	2.5
30	3.0	3.0	2.9	2.4	---	2.5	1.3	13	2.0	4.4	1.4	3.0
31	2.8	---	2.9	2.3	---	2.5	---	10	---	3.9	1.2	---
TOTAL	55.68	90.0	93.8	85.6	64.1	82.3	57.4	1192.6	144.1	90.82	67.7	60.48
MEAN	1.80	3.00	3.03	2.76	2.29	2.65	1.91	38.5	4.80	2.93	2.18	2.02
MAX	6.3	3.5	3.5	3.6	2.7	3.0	2.5	503	8.7	6.3	3.3	3.0
MIN	.40	2.7	2.5	2.2	2.0	2.4	1.3	1.1	2.0	.42	1.1	.98
AC-FT	110	179	186	170	127	163	114	2370	286	180	134	120

CAL YR 1980 TOTAL 1171.14 MEAN 3.20 MAX 7.4 MIN .16 AC-FT 2320
WTR YR 1981 TOTAL 2084.58 MEAN 5.71 MAX 503 MIN .40 AC-FT 4130

BEST DOCUMENT AVAILABLE

06408500 SPRING CREEK NEAR HERMOSA, SD

LOCATION.--Lat 43°56'31", long 103°09'32", in SE¼SE¼SE¼ sec.21, T.1 S., R.8 E., Pennington County, Hydrologic Unit 10120109, at left upstream end of county highway bridge, 0.3 mi (0.5 km) upstream from Chicago and North Western Transportation Company bridge and 7.5 mi (12.1 km) north of Hermosa.

DRAINAGE AREA.--199 mi² (515 km²).

PERIOD OF RECORD.--July 1949 to current year.

REVISED RECORDS.--WSP 1729: 1950.

GAGE.--Water-stage recorder. Datum of gage is 3,265.30 ft (995.263 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 30, 1973, nonrecording gage and crest-stage gage 210 ft (64.0 m) upstream, and Mar. 30 to Sept. 30, 1973, water-stage recorder at present site, both at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records poor. Considerable loss in sinkholes in reach 10 to 15 mi (16 to 24 km) above station. Flow slightly regulated by Lake Sheridan, capacity, 12,657 acre-ft (15.6 hm³), 24 mi (39 km) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--32 years, 5.28 ft³/s (0.150 m³/s), 3,830 acre-ft/yr (4.72 hm³/yr); median of yearly mean discharges, 1.5 ft³/s (0.04 m³/s), 1,100 acre-ft/yr (1.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,400 ft³/s (379 m³/s) June 10, 1972, gage height, 13.12 ft (3.999 m), site and datum then in use, from floodmarks, from rating curve extended above 350 ft³/s (9.91 m³/s) on basis of contracted-opening measurement of peak flow; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.9 ft³/s (0.08 m³/s) at 1415 hours, May 17, gage height, 2.12 ft (0.646 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.02	.00	.06	.02	.00	.00	.00	.00	.00
2	.00	.00	.00	.03	.00	.04	.03	.00	.00	.00	.00	.00
3	.00	.00	.00	.03	.00	.08	.02	.00	.00	.00	.00	.00
4	.00	.00	.00	.02	.00	.05	.10	.41	.00	.00	.00	.00
5	.00	.00	.00	.02	.00	.07	.00	.01	.00	.00	.00	.00
6	.00	.00	.00	.02	.00	.01	.00	.10	.00	.00	.00	.00
7	.00	.00	.00	.02	.00	.03	.02	1.2	.00	.00	.00	.00
8	.00	.00	.00	.02	.00	.04	.07	.51	.00	.00	.00	.00
9	.00	.00	.00	.02	.00	.04	.02	.32	.00	.00	.00	.00
10	.00	.00	.00	.02	.00	.04	.00	.17	.00	.00	.00	.00
11	.00	.00	.02	.03	.00	.07	.06	.00	.00	.00	.00	.00
12	.00	.00	.02	.04	.00	.07	.02	.19	.00	.00	.00	.00
13	.00	.00	.02	.03	.05	.07	.00	.55	.00	.00	.00	.00
14	.00	.00	.02	.05	.07	.13	.00	.42	.00	.00	.00	.00
15	.00	.00	.03	.03	.05	.08	.00	.08	.00	.00	.00	.00
16	.00	.00	.05	.02	.07	.08	.00	.74	.00	.00	.00	.00
17	.00	.00	.02	.02	.05	.03	.00	1.6	.00	.00	.00	.00
18	.00	.00	.00	.02	.06	.03	.00	1.3	.00	[illegible]	.00	.00
19	.00	.00	.00	.02	.06	.07	.00	.65	.00	[illegible]	.00	.00
20	.00	.00	.00	.02	.05	.12	.00	.53	.00	.00	.00	.00
21	.00	.00	.00	.02	.05	.15	.07	.21	.00	.00	.00	.00
22	.00	.00	.00	.05	.05	.15	.02	.10	.00	.00	.00	.00
23	.00	.00	.00	.09	.05	.15	.00	1.2	.00	.00	.00	.00
24	.00	.00	.00	.05	.05	.13	.00	.58	.00	.00	.00	.00
25	.00	.00	.02	.03	.05	.16	.00	.15	.00	.00	.00	.00
26	.00	.00	.04	.02	.05	.05	.00	.04	.00	.00	.00	.00
27	.00	.00	.02	.02	.05	.04	.00	.03	.00	.00	.00	.00
28	.00	.00	.02	.00	.05	.12	.00	.60	.00	.00	.00	.00
29	.00	.00	.03	.00	---	.04	.00	.05	.00	.00	.00	.00
30	.00	.00	.02	.00	---	.05	.00	[illegible]	.00	.00	.00	.00
31	.00	---	.02	.00	---	.04	---	[illegible]	---	.00	.00	---
TOTAL	.00	.00	.35	.78	.86	2.29	.45	11.74	.00	.00	.00	.00
MEAN	.000	.000	.011	.025	.031	.074	.015	.38	.000	.000	.000	.000
MAX	.00	.00	.05	.09	.07	.16	.10	1.6	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.7	1.5	1.7	4.5	.9	23	.00	.00	.00	.00

CAL YR 1980 TOTAL 188.36 MEAN .51 MAX 32 MIN .00 AC-FT 374
WTR YR 1981 TOTAL 16.47 MEAN .045 MAX 1.6 MIN .00 AC-FT 33

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD
(Hydrologic benchmark and radiochemical station)

LOCATION.--Lat 44°00'49", long 103°49'48", in SW¼ sec.25, T.1 N., R.2 E., Pennington County, Hydrologic Unit 10120110, on right bank 50 ft (15 m) downstream from highway bridge, 250 ft (76 m) downstream from South Fork Castle Creek, 600 ft (183 m) upstream from high-water line of Deerfield Reservoir, 2.5 mi (4.0 km) southwest of Deerfield Dam, and 14 mi (23 km) northwest of Hill City.

DRAINAGE AREA.--83 mi² (215 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--June 1948 to current year. Prior to October 1953, published as "above Deerfield Reservoir, near Deerfield".

REVISED RECORDS.--WSP 1917: 1952(M).

GAGE.--Water-stage recorder and grouted-rock control. Altitude of gage is 5,910 ft (1,800 m), from reservoir elevation. Prior to Aug. 31, 1948, nonrecording gage at site 50 ft (15 m) upstream at datum 2.05 ft (0.625 m) higher.

REMARKS.--Records good except those for winter periods and for period of no gage-height record, which are poor.

AVERAGE DISCHARGE.--33 years, 10.3 ft³/s (0.292 m³/s), 7,460 acre-ft/yr (9.20 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,120 ft³/s (31.7 m³/s) May 22, 1952, gage height, 5.81 ft (1.771 m), from rating curve extended above slope-area measurement at gage height, 5.67 ft (1.728 m); minimum, 1.2 ft³/s (0.034 m³/s) Apr. 25, 1969; minimum gage height, 1.35 ft (0.411 m) Nov. 12, 1949, Feb. 19, 1954, Mar. 7, 1957, Mar. 29, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 20 ft³/s (0.57 m³/s) at 2000 hours, July 25, gage height, 2.08 ft (0.634 m); maximum gage height, 2.97 ft (0.905 m) Dec. 8 (backwater from ice); no peak above base of 100 ft³/s (2.83 m³/s); minimum daily discharge, 6.0 ft³/s (0.17 m³/s) Feb. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	9.0	10	9.4	9.0	8.0	8.8	11	10	9.0	7.9	7.9	7.4
2	9.0	9.8	9.8	9.5	8.0	9.0	12	11	9.0	7.4	7.9	7.0
3	9.0	10	10	9.5	8.0	9.6	12	11	9.5	7.9	7.9	7.0
4	9.0	9.6	9.5	10	7.6	9.0	12	12	9.5	7.4	8.1	7.0
5	9.2	10	8.5	10	7.2	9.0	11	11	9.0	7.2	8.1	7.7
6	8.8	10	8.1	11	7.0	9.3	10	11	9.0	7.2	7.9	9.8
7	8.8	10	7.9	10	7.0	9.3	10	11	8.6	6.8	7.7	7.9
8	8.8	11	7.6	10	6.8	9.6	10	11	8.6	6.8	7.9	7.7
9	9.0	11	7.6	9.5	6.4	8.1	10	11	10	6.8	8.1	7.4
10	9.0	11	7.6	10	6.0	9.0	10	11	9.0	7.0	8.4	7.4
11	8.8	10	7.9	10	6.4	8.8	11	10	8.4	7.2	8.1	7.4
12	8.8	10	7.9	10	7.5	8.8	11	10	8.8	7.2	8.1	7.7
13	8.8	10	8.0	9.5	8.0	9.0	11	10	7.9	9.0	8.1	7.7
14	8.8	10	8.5	9.0	8.4	9.3	11	9.8	8.6	7.9	7.9	7.7
15	10	10	8.5	8.5	8.4	8.8	10	9.3	8.4	7.9	8.1	7.9
16	9.0	9.5	8.0	8.5	8.4	9.0	10	10	7.9	8.1	9.8	7.7
17	6.6	9.0	8.5	9.0	8.4	9.0	10	12	7.4	8.1	9.0	7.7
18	9.0	9.0	9.0	9.5	8.1	8.6	10	12	7.2	7.9	8.6	7.7
19	10	9.2	9.5	9.5	8.8	8.4	10	10	7.0	7.4	9.0	7.7
20	11	9.3	10	9.5	8.8	9.3	10	9.8	7.9	7.2	9.0	7.7
21	10	10	10	10	8.6	8.8	10	9.8	7.9	7.7	8.1	7.7
22	10	10	9.5	10	8.4	8.8	11	9.8	7.7	8.8	8.1	7.7
23	9.3	9.5	9.0	10	9.0	8.8	11	11	7.2	8.8	7.9	7.7
24	9.0	9.0	8.5	9.5	9.3	8.4	11	12	6.8	7.9	7.9	7.4
25	9.5	9.0	9.0	9.5	9.6	8.8	10	11	7.2	13	7.9	7.2
26	10	9.4	9.5	9.0	9.8	9.3	10	11	7.2	12	7.9	7.2
27	9.8	9.6	9.5	9.0	9.3	9.3	11	10	7.4	9.0	7.9	7.2
28	9.5	9.6	9.5	9.0	8.8	9.3	10	10	7.4	8.6	7.7	7.4
29	9.5	9.2	9.0	9.0	---	9.8	10	9.5	7.7	8.1	7.7	7.4
30	10	9.2	9.0	8.5	---	10	10	9.5	7.7	8.1	7.7	7.4
31	10	---	9.0	8.5	---	9.8	---	9.0	---	7.9	7.4	---
TOTAL	287.0	292.9	273.3	293.5	226.0	280.8	316	325.5	244.9	250.2	251.8	227.5
MEAN	9.26	9.76	8.82	9.47	8.07	9.06	10.5	10.5	8.16	8.07	8.12	7.58
MAX	11	11	10	11	9.8	10	12	12	10	13	9.8	9.8
MIN	6.6	9.0	7.6	8.5	6.0	8.1	10	9.0	6.8	6.8	7.4	7.0
AC-FT	569	581	542	582	448	557	627	646	486	496	499	451

CAL YR 1980 TOTAL 3906.3 MEAN 10.7 MAX 25 MIN 6.2 AC-FT 7750
WTR YR 1981 TOTAL 3269.4 MEAN 8.96 MAX 13 MIN 6.0 AC-FT 6480

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES.--May 1964 to September 1980.

INSTRUMENTATION.--Recorder with thermograph attachment.

REMARKS.--Periodic samples obtained for analysis of suspended-sediment concentration most years. Monthly samples obtained for water-quality analysis.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum, 22.0°C July 17, 1969; minimum, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	COLI-FORM, TOTAL, IMMED. (COLS. PER 100 ML) (31501)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)
OCT 14...	1330	8.8	480	8.3	6.0	10.4	21	K14	55	250	9	52
NOV 10...	1430	10	460	--	5.0	10.8	--	K4	K8	250	12	53
DEC 03...	1430	10	460	8.3	.0	10.3	--	K25	K42	250	0	52
JAN 06...	1430	11	475	8.6	.0	10.9	--	K1	K5	260	1	55
FEB 17...	1230	8.4	485	8.1	1.0	10.5	--	K11	44	270	16	57
MAR 09...	1400	11	460	8.4	2.0	10.7	--	ND	K10	270	18	58
APR 01...	1430	11	460	8.6	6.0	13.0	--	K1	K13	260	6.7	55
MAY 08...	1130	11	450	8.7	4.5	--	--	--	--	280	4.9	59
JUN 08...	1145	9.0	422	8.9	15.5	9.9	--	K12	K20	250	11	51
JUL 02...	1300	7.7	450	8.3	14.5	12.7	--	K68	190	260	26	53
AUG 10...	1300	8.4	370	8.3	12.5	9.0	--	--	--	260	8.3	54
SEP 01...	1530	7.5	350	8.2	12.0	9.4	--	--	K23	260	35	51

DATE	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)
OCT 14...	29	1.2	1	.0	1.2	--	3.4	.6	.1	8.4	216
NOV 10...	29	1.1	1	.0	1.1	240	2.6	.7	.1	8.5	241
DEC 03...	28	1.2	1	.0	1.7	250	6.4	.7	.2	8.9	245
JAN 06...	30	2.0	2	.1	6.8	260	2.8	2.5	.2	9.0	252
FEB 17...	30	1.4	1	.0	1.5	250	6.1	.8	.2	9.4	255
MAR 09...	30	1.8	1	.0	1.2	250	9.2	.7	.1	8.7	256
APR 01...	29	1.7	1	.1	1.2	250	9.9	.7	.2	8.4	239
MAY 08...	31	2.0	2	.1	1.1	270	3.6	.8	.2	8.4	262
JUN 08...	30	1.8	2	.1	.9	240	2.9	.5	.1	7.9	220
JUL 02...	30	1.9	2	.1	.8	230	1.0	.7	.1	8.9	229
AUG 10...	30	1.5	1	.0	.9	250	<5.0	1.0	.1	8.9	224
SEP 01...	31	1.4	1	.0	1.1	220	<5.0	.5	.2	8.7	218

< Less than.
K Non-ideal colony count.

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)
OCT 14...	241	.29	5.1	.10	.12	.030	.09	.06	.020	15	.36
NOV 10...	241	.33	6.5	.11	.13	.030	.09	--	--	29	.78
DEC 03...	250	.33	6.6	.22	.20	.010	.03	--	--	--	--
JAN 06...	266	.34	7.6	.25	.25	.030	.09	--	--	--	--
FEB 17...	258	.35	5.7	.27	.24	.010	.03	--	--	81	1.8
MAR 09...	261	.35	7.6	.17	.19	.060	.18	--	--	--	--
APR 01...	257	.33	7.6	.16	.16	.060	.18	--	--	70	2.2
MAY 08...	269	.36	7.7	.10	.08	.050	.15	--	--	--	--
JUN 06...	240	.30	5.3	.05	.04	.060	.18	--	--	78	1.9
JUL 02...	235	.31	4.7	.01	.01	.030	.09	.09	.030	98	2.0
AUG 10...	237	.30	5.1	.11	.11	.020	.06	--	--	--	--
SEP 01...	231	.30	4.4	.00	.00	.030	.09	--	--	24	.49

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	BARIUM, TOTAL RECOVERABLE (UG/L AS BA) (01007)	BARIUM, SUSPENDED RECOVERABLE (UG/L AS BA) (01006)	BARIUM, DISSOLVED (UG/L AS BA) (01005)	BERYLLIUM, DISSOLVED (UG/L AS BE) (01010)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)
APR 01...	1430	11	1	100	30	70	<1	0	<1	20	20	0
AUG 10...	1300	8.4	2	100	30	70	<1	0	<1	10	10	0

DATE	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, SUSPENDED RECOVERABLE (UG/L AS FE) (01044)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	LITHIUM DISSOLVED (UG/L AS LI) (01130)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)
APR 01...	<3	4	<10	1200	1200	11	2	2	0	5	40	30
AUG 10...	<3	4	<10	240	--	<10	1	--	<10	9	10	4

DATE	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY DISSOLVED (UG/L AS HG) (71890)	MOLYBDENUM, DISSOLVED (UG/L AS MO) (01060)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	SILVER, TOTAL RECOVERABLE (UG/L AS AG) (01077)	SILVER, SUSPENDED RECOVERABLE (UG/L AS AG) (01076)	SILVER, DISSOLVED (UG/L AS AG) (01075)	STRONTIUM, DISSOLVED (UG/L AS SR) (01080)	VANADIUM, DISSOLVED (UG/L AS V) (01085)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
APR 01...	11	.0	<10	1	0	0	0	70	<6.0	50	--	<3
AUG 10...	6	.0	<10	0	0	0	0	70	<6.0	10	0	13

< Less than.

BEST DOCUMENT AVAILABLE

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	URANIUM DISSOLVED, EXTRACTION (UG/L) (80020)	GROSS ALPHA, DISSOLVED (UG/L AS U-NAT) (80030)	GROSS ALPHA, SUSP. TOTAL (UG/L AS U-NAT) (80040)	GROSS BETA, DISSOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, SUSP. TOTAL (PCI/L AS CS-137) (03516)	GROSS BETA, DISSOLVED (PCI/L AS SR/YT-90) (80050)	GROSS BETA, SUSP. TOTAL (PCI/L AS SR/YT-90) (80060)	RADIUM 226, DISSOLVED, RADON METHOD (PCI/L) (09511)
AUG										
10...	1300	8.4	.72	<6.5	<.4	<4.6	<.4	<4.5	<.4	.09

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	ALDRIN, TOTAL (UG/L) (39330)	ALDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39333)	CHLORDANE, TOTAL (UG/L) (39350)	CHLORDANE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39351)	DDD, TOTAL (UG/L) (39360)	DDD, TOTAL IN BOTTOM MATERIAL (UG/KG) (39363)	DDE, TOTAL (UG/L) (39365)	DDE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39368)
AUG										
10...	1300	8.4	.00	.0	.00	.0	.00	.3	.00	.1

DATE	DDT, TOTAL (UG/L) (39370)	DDT, TOTAL IN BOTTOM MATERIAL (UG/KG) (39373)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	DI-ELDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39383)	ENDRIN, TOTAL (UG/L) (39390)	ENDRIN, TOTAL IN BOTTOM MATERIAL (UG/KG) (39393)	ETHION, TOTAL (UG/L) (39398)	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR, TOTAL IN BOTTOM MATERIAL (UG/KG) (39413)
AUG										
10...	.00	.0	.00	.00	.0	.00	.0	.00	.00	.0

DATE	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG) (39423)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG) (39481)	LINDANE TOTAL (UG/L) (39340)	LINDANE TOTAL IN BOTTOM MATERIAL (UG/KG) (39343)	MALA-THION, TOTAL (UG/L) (39530)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)
AUG									
10...	.00	.0	.00	.0	.00	.0	.00	.00	.00

DATE	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOXA-PHENE, TOTAL IN BOTTOM MATERIAL (UG/KG) (39403)	TOTAL TRI-THION (UG/L) (39786)	PER-THANE TOTAL (UG/L) (39034)	ENDO-SULFAN, TOTAL (UG/L) (39388)	MIREX, TOTAL (UG/L) (39755)	PCB, TOTAL (UG/L) (39516)	PCB, TOTAL IN BOTTOM MATERIAL (UG/KG) (39519)
AUG									
10...	.00	.00	.0	.00	.00	.00	.00	.00	0

< Less than.

BEST DOCUMENT AVAILABLE

06409000 CASTLE CREEK ABOVE DEERFIELD RESERVOIR, NEAR HILL CITY, SD--Continued

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	APRIL		MAY		JUNE		JULY		AUGUST		SEPTEMBER	
1			---	---	---	---	20.5	14.0	18.0	11.0	14.0	8.0
2			---	---	---	---	18.0	11.5	19.0	11.5	14.0	9.0
3			---	---	---	---	14.0	8.5	18.5	11.5	12.0	10.0
4			---	---	---	---	17.0	9.5	18.0	11.5	16.0	10.0
5			---	---	---	---	19.5	10.0	18.0	10.5	16.5	11.5
6			---	---	---	---	20.5	11.5	16.5	10.5	14.5	10.0
7			---	---	---	---	20.5	13.0	13.5	8.5	14.0	8.0
8			8.0	4.5	19.0	15.0	18.0	10.5	11.5	8.5	14.5	8.0
9			10.5	4.5	16.0	11.5	18.0	9.5	12.0	9.5	15.0	9.0
10			8.5	4.5	14.0	8.5	19.0	11.5	15.5	9.0	14.5	9.0
11			7.0	4.5	19.0	10.5	18.0	11.5	16.5	9.5	14.5	9.0
12			6.0	4.5	18.5	11.0	16.0	13.0	17.0	10.0	15.5	9.0
13			5.0	4.5	19.0	13.0	16.0	11.0	15.5	12.0	14.5	9.0
14			11.5	4.5	14.0	10.5	16.0	12.0	16.0	10.0	12.0	10.0
15			14.0	5.0	12.0	7.0	18.5	12.0	15.0	10.0	11.5	8.0
16			11.5	6.5	16.5	6.5	15.5	10.5	13.5	11.0	10.5	6.5
17			6.5	5.0	15.0	10.0	15.0	9.5	13.5	10.0	11.5	6.5
18			5.5	4.5	14.5	7.0	18.0	9.5	16.5	9.5	12.0	6.5
19			11.0	4.0	16.0	9.0	18.5	10.5	18.0	10.5	13.0	6.5
20			13.5	4.5	16.0	11.0	18.0	10.0	17.0	11.0	13.0	8.5
21			13.0	6.0	15.0	10.5	16.5	11.0	17.0	11.0	12.0	7.0
22			11.0	5.5	19.0	10.0	15.0	10.5	16.5	12.0	12.0	8.0
23			---	---	18.0	11.0	14.0	8.0	15.5	10.0	14.0	9.0
24			---	---	17.0	11.0	16.5	11.5	16.5	10.0	11.5	9.0
25			---	---	19.5	10.5	14.0	9.5	16.5	10.0	13.0	9.5
26			---	---	20.5	12.0	11.0	9.0	16.5	11.0	10.5	8.0
27			---	---	19.5	13.0	11.5	9.0	15.0	9.0	9.5	6.5
28			---	---	16.0	11.5	15.5	8.0	16.0	9.5	12.0	7.0
29			---	---	17.0	9.5	17.0	9.0	15.5	10.0	10.0	7.0
30			---	---	19.0	12.0	16.5	11.0	17.0	10.5	10.0	8.0
31			---	---	---	---	18.5	11.0	14.5	10.0	---	---
MONTH			14.0	4.0	20.5	6.5	20.5	8.0	19.0	8.5	16.5	6.5

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
	OCTOBER		NOVEMBER		DECEMBER		JANUARY		FEBRUARY		MARCH	
1	---	---	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0
2	---	---	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0
3	---	---	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0
4	---	---	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0
5	---	---	6.5	6.0	.0	.0	.0	.0	.0	.0	.0	.0
6	---	---	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0
7	---	---	6.5	6.0	.0	.0	.0	.0	.0	.0	.0	.0
8	---	---	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0
9	---	---	6.0	4.5	.0	.0	.0	.0	.0	.0	.0	.0
10	---	---	5.0	.5	.0	.0	.0	.0	.0	.0	---	---
11	---	---	3.5	.0	.0	.0	.0	.0	.0	.0	---	---
12	---	---	4.0	.0	.0	.0	.0	.0	.0	.0	---	---
13	---	---	.0	.0	.0	.0	.0	.0	.0	.0	---	---
14	7.0	6.5	.0	.0	.0	.0	.0	.0	.0	.0	---	---
15	7.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	---	---
16	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	---	---
17	6.0	5.5	.0	.0	.0	.0	.0	.0	.0	.0	---	---
18	5.5	5.5	.0	.0	.0	.0	.0	.0	.0	.0	---	---
19	6.5	5.5	.0	.0	.0	.0	.0	.0	.0	.0	---	---
20	6.5	5.5	.0	.0	.0	.0	.0	.0	.0	.0	---	---
21	7.0	5.5	.0	.0	.0	.0	.0	.0	.0	.0	---	---
22	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	---	---
23	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	---	---
24	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	---	---
25	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	---	---
26	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	---	---
27	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	---	---
28	6.0	6.0	.0	.0	.0	.0	.0	.0	.0	.0	---	---
29	6.0	6.0	.0	.0	.0	.0	.0	.0	---	---	---	---
30	6.0	6.0	.0	.0	.0	.0	.0	.0	---	---	---	---
31	5.0	6.0	---	---	.0	.0	.0	.0	---	---	---	---
MONTH	7.0	5.5	6.5	.0	.0	.0	.0	.0	.0	.0	.0	.0

06409500 DEERFIELD RESERVOIR NEAR HILL CITY, SD

LOCATION.--Lat 44°01'41", long 103°47'09", in NE¼SW¼ sec.20, T.1 N., R.3 E., at dam on Castle Creek, Hydrologic Unit 10120110, 0.4 mi (0.6 km) upstream from Dutchman Creek and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--95 mi^2 (246 km^2), approximately.

PERIOD OF RECORD.--May 1947 to current year (monthend contents only). Some elevations obtained during period of initial filling, December 1945 to May 1947, are available in Bureau of Reclamation files. Prior to October 1953, published as "near Deerfield."

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (levels by Bureau of Reclamation). Prior to July 20, 1964, nonrecording gage at same site and datum.

REMARKS.--Reservoir is formed by earthfill dam. Storage began Dec. 3, 1945; dam completed in 1947. Usable capacity, 15,153 acre-ft (18.7 hm^3) between elevations 5,839 ft (1,779.7 m), lowest outlet, and 5,908 ft (1,800.8 m), crest of spillway. Dead storage below elevation 5,839 ft (1,779.7 m), 565 acre-ft (0.697 hm^3). Figures given herein represent usable contents. Water is used to supplement Rapid City water supply and for irrigation in Rapid Creek basin downstream from Rapid City.

COOPERATION.--Records of elevation and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 15,340 acre-ft (18.9 hm^3) May 22, 1952, elevation, 5,908.50 ft (1,800.911 m), from capacity table extended above elevation 5,908.00 ft (1,800.758 m), crest of spillway; minimum observed, 5 acre-ft (6,160 m^3) Oct. 2, 1959, elevation, 5,839.10 ft (1,779.758 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 15,086 acre-ft (18.6 hm^3) May 5, 6, elevation, 5,907.84 ft (1,800.710 m); minimum, 13,030 acre-ft (16.1 hm^3) Sept. 28-30, elevation, 5,902.66 ft (1,799.131 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents
Sept. 30	5904.98	13930	
Oct. 31	5903.14	13213	-717
Nov. 30	5904.08	13577	+364
Dec. 31	5905.32	14065	+488
CAL YR 1980			+375
Jan. 31	5906.29	14453	+388
Feb. 28	5907.12	14790	+337
Mar. 31	5907.70	15028	+238
Apr. 30	5907.67	15016	-12
May 31	5907.54	14962	-54
June 30	5907.36	14889	-73
July 31	5907.18	14815	-74
Aug. 31	5904.36	13686	-1129
Sept. 30	5902.66	13030	-656
WTR YR 1981			-900

06410000 CASTLE CREEK BELOW DEERFIELD DAM, SD

LOCATION.--Lat 44°01'45", long 103°46'53", in NW¼SE¼ sec.20, T.1 N., R.3 E., Pennington County, Hydrologic Unit 10120110, on left bank 200 ft (61 m) upstream from Dutchman Creek, 1,100 ft (335 m) downstream from Deerfield Dam, and 12.5 mi (20.1 km) northwest of Hill City.

DRAINAGE AREA.--96 mi² (249 km²), approximately.

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 5,784.52 ft (1,763.122 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Oct. 15, 1947, at site 400 ft (122 m) downstream at datum 0.23 ft (0.070 m) higher. Oct. 15, 1947, to Sept. 1, 1948, at site 550 ft (168 m) downstream at datum 1.77 ft (0.540 m) lower, and Sept. 2, 1948, to Nov. 2, 1971, at site 300 ft (91 m) upstream at datum 4.0 ft (1.22 m) higher.

REMARKS.--Records good. Flow completely regulated by Deerfield Reservoir 1,100 ft (335 m) upstream. (See station 06409500.) Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--35 years, 10.6 ft³/s (0.300 m³/s), 7,680 acre-ft/yr (9.47 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 200 ft³/s (5.66 m³/s) May 22, 1952; maximum gage height, 3.87 ft (1.180 m) May 23, 1952 (backwater from spillway overflow), site and datum then in use; no flow at times in 1948, 1950-60.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 60 ft³/s (1.70 m³/s) at 1100 hours, July 31, gage height, 4.34 ft (1.323 m); minimum daily, 2.2 ft³/s (0.06 m³/s) for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	23	2.3	2.2	2.4	2.4	2.4	9.7	6.6	15	7.9	27	22
2	23	2.2	2.2	2.4	2.4	2.4	9.6	6.3	15	7.9	27	23
3	23	2.2	2.2	2.4	2.4	2.4	12	6.2	15	7.9	27	23
4	23	2.2	2.3	2.4	2.4	2.4	14	6.3	15	8.1	27	25
5	23	2.2	2.3	2.4	2.4	2.4	14	6.4	12	8.1	27	27
6	22	2.3	2.3	2.4	2.4	2.4	15	11	10	8.1	26	26
7	22	2.3	2.3	2.4	2.4	2.4	14	15	11	8.1	26	26
8	22	2.3	2.3	2.4	2.4	2.3	14	14	11	8.5	25	27
9	22	2.3	2.3	2.4	2.4	2.2	13	14	11	8.5	25	27
10	22	2.3	2.3	2.4	2.4	2.2	11	13	11	7.5	25	26
11	22	2.2	2.3	2.4	2.4	2.2	11	13	10	6.6	25	18
12	22	2.2	2.3	2.4	2.4	2.2	11	14	10	6.8	24	15
13	22	2.2	2.3	2.4	2.4	2.2	11	14	9.9	7.2	24	15
14	22	2.2	2.4	2.4	2.4	2.2	11	14	9.6	7.0	24	15
15	22	2.3	2.4	2.4	2.4	2.2	11	14	8.9	7.3	24	15
16	21	2.3	2.4	2.4	2.4	2.2	11	14	8.3	7.3	24	15
17	21	2.3	2.4	2.4	2.4	2.2	8.4	14	8.3	8.1	24	16
18	21	2.3	2.4	2.4	2.4	2.2	6.6	14	8.2	8.7	24	15
19	21	2.3	2.4	2.4	2.4	2.2	6.6	14	8.3	8.5	23	15
20	21	2.3	2.4	2.4	2.4	9.1	6.6	14	8.3	8.9	23	15
21	21	2.3	2.4	2.4	2.4	11	6.6	14	8.3	9.1	23	15
22	21	2.3	2.4	2.4	2.4	11	6.5	14	8.1	9.6	23	15
23	21	2.3	2.5	2.4	2.4	10	6.4	14	8.1	9.4	23	15
24	21	2.3	2.5	2.4	2.4	10	6.4	14	8.1	9.1	23	14
25	21	2.3	2.5	2.4	2.4	10	6.5	14	8.2	15	23	8.5
26	21	2.2	2.5	2.4	2.4	10	6.5	15	8.2	28	23	8.5
27	21	2.2	2.5	2.4	2.4	10	6.5	15	8.2	28	23	8.3
28	11	2.3	2.5	2.4	2.4	10	6.6	15	8.3	28	23	6.8
29	2.2	2.2	2.4	2.4	---	9.8	6.6	15	8.3	28	23	6.8
30	2.3	2.2	2.4	2.4	---	9.8	6.6	15	8.1	28	23	7.0
31	2.3	---	2.4	2.4	---	9.6	---	15	---	33	22	---
TOTAL	604.8	67.8	73.4	74.4	67.2	163.6	285.7	397.8	297.7	382.2	753	510.9
MEAN	19.5	2.26	2.37	2.40	2.40	5.28	9.52	12.8	9.92	12.3	24.3	17.0
MAX	23	2.3	2.5	2.4	2.4	11	15	15	15	33	27	27
MIN	2.2	2.2	2.2	2.4	2.4	2.2	6.4	6.2	8.1	6.6	22	6.8
AC-FT	1200	134	146	148	133	325	567	789	590	758	1490	1010

CAL YR 1980 TOTAL 3821.1 MEAN 10.4 MAX 28 MIN 2.2 AC-FT 7580
WTR YR 1981 TOTAL 3678.5 MEAN 10.1 MAX 33 MIN 2.2 AC-FT 7300

06410500 RAPID CREEK ABOVE PACTOLA RESERVOIR, AT SILVER CITY, SD

LOCATION.--Lat 44°05'05", long 103°34'48", in SW¼SE¼ sec.36, T.2 N., R.4 E., Pennington County, Hydrologic Unit 10120110, on right bank 0.8 mi (1.3 km) west of Silver City and 3.0 mi (4.8 km) downstream from Slate Creek.

DRAINAGE AREA.--292 mi^2 (756 km^2).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,620.00 ft (1,408.176 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Deerfield Reservoir on Castle Creek since December 1945 (see station 06409500). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--28 years, 40.0 ft^3/s (1.133 m^3/s), 28,980 acre-ft/yr (35.7 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,060 ft^3/s (58.3 m^3/s) May 15, 1965, gage height, 10.44 ft (3.182 m); from rating curve extended above 1,000 ft^3/s (28.3 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 4.0 ft^3/s (0.11 m^3/s) Jan. 20, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 83 ft^3/s (2.35 m^3/s) at 0345 hours, July 26; gage height, 4.92 ft (1.500 m); maximum gage height, 5.34 ft (1.637 m) Dec. 5 (backwater from ice); minimum daily discharge, 7.0 ft^3/s (0.20 m^3/s) Feb. 10.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 18 to June 19, July 23 to Sept. 25; stage-discharge relation affected by ice Nov. 17-19, Nov. 23 to Feb. 8)

4.2	8.5	4.7	64.5
4.3	16	4.8	80.1
4.5	36.5		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	31	16	8.0	14	9.6	10	22	23	36	19	51	33
2	31	15	8.6	13	9.0	11	23	23	36	26	46	33
3	30	14	9.4	11	9.6	11	24	25	34	24	46	32
4	30	14	10	10	10	11	24	34	33	22	44	33
5	30	15	10	9.4	10	11	25	37	29	20	46	38
6	30	14	10	9.2	9.6	10	26	28	24	19	44	56
7	31	14	10	9.0	8.6	11	28	34	22	17	39	50
8	31	15	11	9.0	8.0	11	27	39	24	18	40	46
9	32	16	11	9.0	7.8	11	30	38	29	18	43	44
10	32	14	13	9.0	7.0	10	34	38	28	16	42	43
11	33	14	13	9.0	7.2	10	32	35	24	15	39	43
12	34	14	13	9.0	7.6	9.6	26	35	24	14	36	31
13	34	14	13	9.0	8.4	10	24	35	24	21	35	27
14	34	14	13	9.2	9.0	11	23	34	24	24	35	26
15	50	14	13	9.0	10	11	23	32	24	24	36	26
16	47	14	13	8.6	10	11	21	42	24	20	50	26
17	39	13	13	8.8	9.4	12	22	66	21	21	48	26
18	39	12	13	9.2	9.4	12	19	77	20	21	40	27
19	40	13	13	9.6	10	13	18	60	20	19	38	26
20	42	14	13	10	11	13	18	50	21	17	36	24
21	40	14	12	11	10	13	16	44	26	16	35	27
22	39	15	13	11	11	14	15	42	24	18	34	27
23	38	14	14	12	12	16	12	62	22	23	34	27
24	36	13	14	12	12	18	12	60	19	19	34	27
25	39	12	14	12	11	19	15	48	19	38	34	27
26	38	11	14	12	11	20	18	48	19	78	33	24
27	39	11	14	12	10	20	19	47	19	66	33	21
28	36	11	14	12	11	20	21	42	21	62	33	20
29	24	11	14	11	---	21	21	39	22	56	33	19
30	18	10	14	10	---	21	20	38	22	51	33	17
31	16	---	14	10	---	21	---	36	---	48	32	---
TOTAL	1063	405	382.0	319.0	269.2	422.6	658	1283	734	870	1204	926
MEAN	34.3	13.5	12.3	10.3	9.61	13.6	21.9	41.4	24.5	28.1	38.8	30.9
MAX	50	16	14	14	12	21	34	77	36	78	51	56
MIN	16	10	8.0	8.6	7.0	9.6	12	23	19	14	32	17
AC-FT	2110	803	758	633	534	838	1310	2540	1460	1730	2390	1840

CAL YR 1980 TOTAL 10175.4 MEAN 27.8 MAX 70 MIN 8.0 AC-FT 20180
WTR YR 1981 TOTAL 8535.8 MEAN 23.4 MAX 78 MIN 7.0 AC-FT 16930

06411000 PACTOLA RESERVOIR NEAR SILVER CITY, SD

LOCATION.--Lat 44°04'20", long 103°29'17", in NE¼SW¼ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, in outlet works of dam on Rapid Creek, 3.8 mi (6.1 km) east of Silver City.

DRAINAGE AREA.--319 mi² (826 km²).

PERIOD OF RECORD.--August 1956 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to Feb. 18, 1970, nonrecording gage at same site and datum.

REMARKS.--Reservoir formed by an earthfill dam completed August 1956. Storage began August 22, 1956. Conservation capacity, 54,960 acre-ft (67.8 hm³) between elevations 4,456.1 ft (1,358.22 m) and 4,580.2 ft (1,396,04 m). Combined dead and inactive storage below elevation 4,456.1 ft (1,358.22 m) is 1,003 acre-ft (1.24 hm³). Flood storage capacity, 43,050 acre-ft (53.1 hm³) between elevations 4,580.2 ft (1,396.04 m) and 4,621.5 ft (1,408.63 m), crest of spillway. Surcharge capacity, 15,780 acre-ft (19.5 hm³) between elevations 4,621.5 ft (1,408.63 m) and 4,633.7 ft (1,412.35 m), maximum pool elevation. Figures given herein represent contents above elevation 4,456.1 ft (1,358.22 m). Reservoir provides flood control and water for municipal and irrigation uses.

COOPERATION.--Records of elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 60,970 acre-ft (75.2 hm³) May 19, 1964, elevation, 4,585.87 ft (1,397.773 m); minimum observed since initial filling, 40,615 acre-ft (50.1 hm³) Sept. 30, 1981, elevation, 4,561.57 ft (1,390.366 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 47,664 acre-ft (58.8 hm³) Apr. 22, 23, elevation, 4,571.24 ft (1,393.314 m); minimum, 40,615 acre-ft (50.1 hm³) Sept. 30, elevation, 4,561.57 ft (1,390.366 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents
Sept. 30	4568.77	45797	
Oct. 31	4570.35	46985	+1188
Nov. 30	4570.25	46909	-76
Dec. 31	4570.50	47099	+190
CAL YR 1980			-6085
Jan. 31	4570.30	46947	-152
Feb. 28	4570.19	46864	-83
Mar. 31	4570.59	47168	+304
Apr. 30	4571.04	47510	+342
May 31	4569.20	46118	-1392
June 30	4568.34	45477	-641
July 31	4564.37	42585	-2892
Aug. 31	4564.13	42413	-172
Sept. 30	4561.57	40615	-1798
WTR YR 1981			-5182

06411500 RAPID CREEK BELOW PACTOLA DAM, SD

LOCATION.--Lat 44°04'36", long 103°28'54", in SW¼NE¼ sec.2, T.1 N., R.5 E., Pennington County, Hydrologic Unit 10120110, on right bank 2,000 ft (610 m) downstream from Pactola Dam, 3.9 mi (6.3 km) upstream from Deer Creek and 13 mi (21 km) west of Rapid City.

DRAINAGE AREA.--320 mi² (829 km²), approximately.

PERIOD OF RECORD.--October 1928 to September 1932 (combined records of Creek and Dakota Power and Light Co. flume), July 1946 to current year. Prior to October 1953, published as "near Pactola." Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 1309: 1931(M).

GAGE.--Water-stage recorder; concrete control since Oct. 16, 1962. Datum of gage is 4,406.00 ft (1,342.949 m) National Geodetic Vertical Datum of 1929, Bureau of Reclamation bench mark. Apr. 19, 1929, to June 30, 1932, nonrecording gage at site 3,500 ft (1,070 m) upstream at different datum. July 24, 1946, to Aug. 24, 1947, nonrecording gage and Aug. 25, 1947, to Nov. 18, 1953, water-stage recorder, at site 2 mi (3 km) upstream at different datum.

REMARKS.--Records good. Flow regulated by dam on Castle Creek since December 3, 1945 (see station 06409500), and completely regulated by Pactola Reservoir 2,000 ft (610 m) upstream since Aug. 22, 1956 (see station 06411000).

AVERAGE DISCHARGE.--39 years, 44.1 ft³/s (1.249 m³/s), 31,950 acre-ft/yr (39.4 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,170 ft³/s (61.5 m³/s) May 22, 1952, gage height, 6.74 ft (2.054 m), site and datum then in use; no flow Oct. 11-17, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 142 ft³/s (4.02 m³/s) May 2, 3, July 10; minimum daily, 11 ft³/s (0.31 m³/s) Oct. 3-5.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

7.0	9.4	7.6	49
7.2	17	7.8	77
7.4	29	8.1	147

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	13	15	15	15	14	14	113	30	94	14	83
2	12	13	15	15	15	14	14	142	30	106	14	79
3	11	13	15	15	15	14	14	142	30	106	14	76
4	11	13	15	15	15	14	14	128	30	113	14	74
5	11	13	15	15	15	14	14	120	30	110	27	70
6	12	13	14	15	15	14	14	108	30	103	34	70
7	12	13	14	15	15	14	14	98	29	101	34	59
8	12	13	14	15	15	14	13	86	29	113	34	54
9	13	13	14	15	14	14	13	63	29	120	34	50
10	15	13	15	15	14	13	13	41	28	142	34	50
11	15	13	13	14	14	13	13	49	28	139	34	50
12	14	13	13	15	14	13	14	66	29	139	34	50
13	12	14	13	15	14	13	14	76	30	120	34	50
14	13	14	13	15	14	13	14	76	32	96	34	64
15	14	14	14	15	14	13	14	70	28	90	34	70
16	14	13	15	15	14	13	15	66	20	86	34	64
17	14	13	15	15	14	13	20	59	19	70	29	59
18	14	13	15	15	14	13	20	18	19	65	27	62
19	14	13	15	14	14	13	20	16	22	48	27	62
20	14	13	15	14	14	13	17	39	26	48	28	62
21	14	13	15	14	14	13	15	59	26	47	49	57
22	14	13	15	14	14	13	15	54	26	59	61	56
23	14	13	15	14	14	13	19	50	30	62	61	58
24	15	13	15	14	14	14	23	50	46	49	62	58
25	14	13	16	14	14	14	23	[illegible]	57	29	62	53
26	13	13	15	14	14	14	24	42	70	16	59	48
27	13	14	15	14	14	14	26	34	72	15	66	48
28	13	14	15	14	14	14	28	30	72	15	59	48
29	13	15	15	14	---	14	40	30	77	15	66	50
30	13	15	15	15	---	14	53	30	83	14	60	52
31	13	---	15	15	---	14	---	30	---	14	79	---
TOTAL	411	399	453	453	400	420	564	2030	1111	2344	1262	1786
MEAN	13.3	13.3	14.6	14.6	14.3	13.5	18.8	65.5	37.0	75.6	40.7	59.5
MAX	15	15	16	15	15	14	53	142	83	142	79	83
MIN	11	13	13	14	14	13	13	16	19	14	14	48
AC-FT	815	791	899	899	793	833	1120	4030	2200	4650	2500	3540

CAL YR 1980 TOTAL 13273 MEAN 36.3 MAX 118 MIN 11 AC-FT 26330
WTR YR 1981 TOTAL 11633 MEAN 31.9 MAX 142 MIN 11 AC-FT 23070

06412500 RAPID CREEK ABOVE CANYON LAKE, NEAR RAPID CITY, SD

LOCATION.--Lat 44°03'04", long 103°18'47", in NE¼NE¼ sec.18, T.1 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on right bank at bridge on State Highway 40, 1.0 mi (1.6 km) southwest of city limits of Rapid City and 2.8 mi (4.5 km) downstream from Victoria Creek.

DRAINAGE AREA.--371 mi^2 (961 km^2).

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,405.39 ft (1,037.963 m) National Geodetic Vertical Datum of 1929, levels by Corps of Engineers. Prior to Oct. 6, 1947, nonrecording gage, Oct. 6, 1947, to Nov. 2, 1967, and Oct. 1, 1968, to Sept. 30, 1976, water-stage recorder all at datum 2.0 ft (0.61 m) higher. Nov. 3, 1967, to Sept. 30, 1968, nonrecording gage at site 0.2 mi (0.3 km) downstream at datum 1.12 ft (0.341 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by dam on Castle Creek since December 1945 (see station 06409500) and by Pactola Reservoir 21 mi (34 km) upstream since August 1956 (see station 06411000). Several observations of water quality were made during the year.

AVERAGE DISCHARGE.--35 years, 39.1 ft^3/s (1.107 m^3/s), 28,330 acre-ft/yr (34.9 hm^3/yr); median of yearly mean discharges, 35 ft^3/s (0.99 m^3/s), 25,400 acre-ft/yr (31 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 31,200 ft^3/s (884 m^3/s) June 9, 1972, gage height, 17.77 ft (5.416 m), present datum, from floodmarks, from rating curve extended above 1,300 ft^3/s (36.8 m^3/s) on basis of slope-area measurement of peak flow; no flow at times in 1950-51. 1957-60, 1962-63.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 132 ft^3/s (3.74 m^3/s) at 0315 hours, July 13, gage height, 3.87 ft (1.180 m); minimum daily, 1.0 ft^3/s (0.028 m^3/s) Dec. 1.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 13 to Jan. 22, Jan. 27 to Feb. 18)

2.7	1.0	3.1	28
2.8	4.5	3.5	71
2.9	12	3.9	131

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	10	6.2	1.0	6.4	4.6	11	4.5	57	25	85	13	69
2	6.7	6.2	1.5	6.0	4.4	9.4	4.5	117	25	98	12	69
3	2.9	6.2	2.0	5.8	4.2	6.4	4.3	119	25	98	11	65
4	2.0	6.2	3.0	5.6	4.1	8.4	4.1	120	25	100	11	64
5	2.6	6.2	2.7	5.3	3.9	7.4	4.0	109	24	100	11	60
6	2.7	6.2	2.3	5.0	3.5	6.2	3.6	109	24	98	15	59
7	2.9	6.9	2.0	4.8	3.1	7.5	3.4	98	25	91	35	56
8	2.6	6.9	2.3	4.6	2.8	5.6	3.6	92	24	100	37	43
9	2.7	6.9	2.9	4.5	2.5	5.1	4.2	77	29	103	37	41
10	3.6	6.9	3.5	4.9	3.2	4.6	4.4	44	26	120	37	38
11	6.0	6.9	4.0	5.6	4.2	4.9	4.8	40	26	126	30	37
12	5.9	6.9	4.5	5.3	5.8	4.7	4.6	52	26	126	28	37
13	6.2	6.5	5.2	5.0	7.6	4.8	5.2	68	26	125	26	36
14	5.4	6.5	5.8	4.6	10	5.0	5.7	66	27	100	28	37
15	20	6.0	6.6	4.4	10	5.0	5.4	65	27	94	28	48
16	15	5.5	7.5	4.1	10	4.5	4.7	62	18	85	28	47
17	10	5.0	8.0	4.7	10	4.5	5.9	63	14	79	26	43
18	8.8	5.5	2.8	5.3	10	4.5	13	66	12	71	22	43
19	7.8	5.5	2.6	6.4	6.6	4.5	15	29	13	56	20	42
20	6.9	6.0	3.5	6.5	8.5	5.0	15	19	20	43	19	42
21	6.7	6.5	5.0	6.7	6.7	5.0	11	47	25	41	19	41
22	5.6	5.5	7.4	7.0	5.6	4.5	8.0	49	22	44	43	36
23	5.6	4.0	6.0	8.4	6.5	4.5	6.2	44	22	58	53	35
24	5.9	2.6	4.5	8.8	7.4	5.0	15	42	37	47	53	37
25	6.2	2.7	5.4	7.1	10	5.0	21	41	42	53	53	36
26	6.2	2.7	6.2	6.6	9.9	4.5	21	36	59	59	52	31
27	6.5	2.8	7.8	5.7	6.1	5.0	21	35	70	39	49	30
28	6.7	3.0	7.6	5.5	7.7	4.5	21	27	71	30	57	29
29	6.2	3.3	7.2	5.3	---	5.0	20	26	73	24	57	30
30	6.2	1.8	7.0	5.0	---	5.0	36	25	82	19	56	30
31	6.7	---	6.6	4.8	---	5.0	---	25	---	15	57	---
TOTAL	199.2	160.0	144.4	175.7	176.9	172.0	300.1	1889	964	2327	1027	1311
MEAN	6.43	5.33	4.66	5.67	6.39	5.55	10.0	60.9	32.1	75.1	33.1	43.7
MAX	20	6.9	8.0	8.8	10	11	36	120	82	126	57	69
MIN	2.0	1.8	1.0	4.1	2.5	4.5	3.4	19	12	15	11	29
AC-FT	395	317	286	349	355	341	595	3750	1910	4620	2040	2600

CAL YR 1980 TOTAL 11326.5 MEAN 30.9 MAX 114 MIN 1.0 AC-FT 22470
WTR YR 1981 TOTAL 8848.3 MEAN 24.2 MAX 126 MIN 1.0 AC-FT 17550

06413650 LIME CREEK AT MOUTH, AT RAPID CITY, SD

LOCATION.--Lat 44°04'27", long 103°15'53", in NW¼NE¼SW¼ sec.3, T.1 N., R.7 E., Pennington County, 500 ft (152 m) above mouth and 1,000 ft (305 m) downstream from Canyon Lake Drive.

DRAINAGE AREA.--10.1 mi^2 (26.2 km^2).

PERIOD OF RECORD.--April to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 3,280 ft (1,000 m), from topographic map.

REMARKS.--Records good. Some flow is pumped from stream for irrigation of lawns and gardens. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge during period, 59 ft^3/s (1.67 m^3/s) at 0815 hours, July 25, gage height, 62.18 ft (18.952 m); minimum daily discharge, 0.63 ft^3/s (0.018 m^3/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	.68	2.4	.89	1.5	.73
2							---	1.7	2.2	2.1	1.5	.73
3							---	1.3	2.2	.90	1.3	.75
4							---	1.6	2.3	.85	1.3	.77
5							---	1.0	2.1	.83	1.7	.79
6							---	1.8	2.1	.80	1.4	1.4
7							---	2.1	2.1	.79	1.2	.84
8							---	1.2	2.0	.87	1.7	.75
9							---	1.4	4.6	.89	2.2	.69
10							---	1.2	2.3	.90	1.3	.67
11							---	1.2	1.9	.92	1.2	.63
12							---	1.4	1.8	1.0	1.1	.67
13							---	1.7	1.5	2.2	1.1	.68
14							---	1.3	1.7	1.2	1.1	.77
15							---	1.3	1.4	1.2	1.1	.84
16							---	3.5	1.3	1.2	1.1	.81
17							---	15	1.2	1.1	1.1	.70
18							---	4.7	1.2	2.6	1.1	.70
19							---	3.3	1.1	1.4	1.1	.68
20							---	2.8	1.3	1.0	1.1	.65
21							---	2.5	1.5	1.1	1.1	.69
22							---	2.5	1.1	1.4	1.0	.70
23							---	5.0	1.0	2.0	.98	.70
24							.80	2.5	1.0	1.5	.98	.90
25							.67	2.5	1.1	15	.97	.92
26							.59	2.3	.86	3.6	.92	.75
27							.63	3.9	.96	2.6	.98	.70
28							.88	2.5	1.1	2.1	1.0	.70
29							.89	2.3	.90	1.9	.98	.69
30							.84	2.1	.84	1.8	.81	.81
31							---	2.8	---	1.6	.67	---
TOTAL							---	81.28	49.06	58.24	36.59	22.81
MEAN							---	2.62	1.64	1.88	1.18	.76
MAX							---	15	4.6	15	2.2	1.4
MIN							---	.68	.84	.79	.67	.63
AC-FT							---	161	97	116	73	45

06413700 RAPID CREEK ABOVE WATER TREATMENT PLANT, AT RAPID CITY, SD

LOCATION.--Lat 44°04'29", long 103°15'34", in SW¼SW¼NE¼ sec.3, T.1 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on right bank at downstream side of foot bridge in Sioux Park, and 700 ft (213 m) downstream from Sheridan Lake road.

DRAINAGE AREA.--404 mi² (1,046 km²), revised.

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,266.31 ft (995.571 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are fair. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm²). Flow regulated by Pactola Reservoir 24 mi (39 km) upstream (see station 06411000). Several observations of water quality were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 360 ft³/s (10.2 m³/s) July 25, 1981, gage height, 6.93 ft (2.112 m); minimum daily discharge, 7.5 ft³/s (0.21 m³/s) Aug. 3, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 360 ft³/s (10.2 m³/s) at 0745 hours, July 25, gage height, 6.93 ft (2.112 m); minimum daily discharge, 7.5 ft³/s (0.21 m³/s) Aug. 3.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 27 to Sept. 30; stage-discharge relation affected by ice Nov. 12-14, Dec. 23, 24, Jan. 3, 30, 31, Feb. 1-3, 7-11)

4.2	8.0	4.7	51
4.3	15	5.7	186

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	23	23	20	17	22	19	63	42	90	9.9	83
2	19	23	18	19	17	21	17	134	40	108	9.1	83
3	16	20	24	20	16	22	17	138	40	107	7.5	76
4	16	20	30	21	20	21	18	141	40	108	8.1	77
5	15	22	27	25	21	21	17	126	38	109	10	70
6	13	21	22	23	22	20	15	128	38	103	20	75
7	11	21	23	19	21	20	14	118	40	90	26	70
8	12	22	21	19	20	21	14	107	38	102	33	51
9	12	22	19	22	19	20	14	91	49	108	43	48
10	13	21	22	20	18	20	14	62	42	127	37	42
11	16	21	25	21	20	20	16	54	40	140	34	42
12	18	21	25	17	21	21	16	64	40	140	35	42
13	17	22	23	22	22	20	13	85	41	145	35	41
14	19	22	22	21	24	20	14	84	41	108	37	42
15	62	23	24	23	27	19	14	83	40	102	34	60
16	31	23	26	20	25	20	14	85	31	85	35	60
17	24	21	25	18	26	19	14	146	22	80	34	52
18	23	21	25	17	25	19	18	103	21	71	28	50
19	23	24	19	22	25	19	20	55	19	58	24	50
20	22	24	17	23	25	18	22	43	25	37	27	50
21	21	23	18	19	25	20	21	64	31	35	25	50
22	22	25	25	21	24	21	19	72	26	39	53	47
23	22	25	23	24	24	22	16	74	24	56	63	49
24	22	20	22	24	23	21	19	63	36	48	63	53
25	21	20	20	24	22	20	26	62	43	105	63	54
26	22	24	28	22	23	20	26	55	59	69	65	43
27	22	21	26	20	24	20	28	56	73	43	59	40
28	22	27	26	18	22	20	30	48	77	31	70	38
29	24	23	21	20	---	20	43	44	76	22	68	36
30	23	23	23	19	---	20	43	41	85	18	69	36
31	23	---	23	18	---	19	---	44	---	12	66	---
TOTAL	646	668	715	641	618	626	591	2533	1257	2496	1190.6	1610
MEAN	20.8	22.3	23.1	20.7	22.1	20.2	19.7	81.7	41.9	80.5	38.4	53.7
MAX	62	27	30	25	27	22	43	146	85	145	70	83
MIN	11	20	17	17	16	18	13	41	19	12	7.5	36
AC-FT	1280	1320	1420	1270	1230	1240	1170	5020	2490	4950	2360	3190

WTR YR 1981 TOTAL 13591.6 MEAN 37.2 MAX 146 MIN 7.5 AC-FT 26960

BEST DOCUMENT AVAILABLE

06413800 DEADWOOD AVENUE DRAIN AT MOUTH, AT RAPID CITY, SD

LOCATION.--Lat 44°04'58", long 103°15'34", in SW¼SE¼SE¼ sec.34, T.2 N., R.7 E., Pennington County, 300 ft (91 m) upstream from mouth.

DRAINAGE AREA.--2.2 mi² (5.7 km²).

PERIOD OF RECORD.--April to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 3,260 ft (994 m), from topographic map.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT PERIOD.--Maximum discharge during period, 39 ft³/s (1.10 m³/s) at 0745 hours, July 25, gage height, 50.83 ft (15.493 m); minimum daily discharge, 1.7 ft³/s (0.048 m³/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1							---	1.8	2.9	2.8	2.9	2.0
2							---	2.1	2.9	3.1	2.9	2.2
3							---	2.1	2.9	2.7	2.7	2.0
4							---	2.1	2.7	2.6	2.8	2.1
5							---	1.8	2.7	2.6	3.0	2.2
6							---	2.0	2.6	2.5	2.7	2.6
7							---	2.2	2.7	2.5	2.6	2.4
8							---	1.9	2.7	2.5	2.9	2.1
9							---	1.9	3.7	2.4	3.4	1.9
10							---	1.8	2.8	2.5	3.0	1.9
11							---	1.8	2.7	2.5	2.9	1.9
12							---	1.9	2.9	2.5	2.7	2.0
13							---	2.0	2.9	3.2	2.6	2.1
14							---	1.9	2.8	2.7	2.6	2.0
15							---	1.9	2.7	2.7	2.6	1.9
16							---	3.3	2.7	2.7	2.6	1.9
17							---	12	2.7	2.6	2.6	2.1
18							---	5.2	2.6	3.3	2.5	2.1
19							---	3.0	2.6	2.9	2.4	1.9
20							---	2.9	2.7	2.7	2.4	2.0
21							2.0	2.8	2.8	2.7	2.3	2.0
22							1.9	2.9	2.7	2.8	2.4	1.9
23							1.8	4.4	2.6	3.2	2.4	2.0
24							1.9	3.0	2.5	2.7	2.3	2.0
25							1.9	2.9	2.8	12	2.3	1.9
26							1.8	2.9	2.6	5.4	2.1	1.9
27							1.8	3.5	2.7	4.2	2.0	1.9
28							1.8	3.4	2.7	3.8	2.0	1.8
29							1.7	3.1	2.6	4.1	2.1	1.8
30							1.8	3.0	2.6	3.2	2.4	1.9
31							---	3.2	---	2.9	2.2	---
TOTAL							---	90.7	82.5	101.0	79.3	60.4
MEAN							---	2.93	2.75	3.26	2.56	2.01
MAX							---	12	3.7	12	3.4	2.6
MIN							---	1.8	2.5	2.4	2.0	1.8
AC-FT							---	180	164	200	157	120

06414000 RAPID CREEK AT RAPID CITY, SD

LOCATION.--Lat 44°05'09", long 103°14'31", in NE¼SE¼SW¼ sec.35, T.2 N., R.7 E., Pennington County, Hydrologic Unit 10120110, on left bank 3,000 ft (914 m) upstream from 12th Street in Rapid City and 3.6 mi (5.8 m) downstream from Canyon Lake Dam.

DRAINAGE AREA.--410 mi² (1,060 km²), approximately.

PERIOD OF RECORD.--June 1903 to November 1906, July 1942 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 3,230.00 ft (984.504 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 30, 1906, nonrecording gage at site 1 mi (1.6 km) downstream at different datum, and June 10, 1972, to Nov. 1, 1972, nonrecording gage at site 800 ft (244 m) downstream at datum 0.80 ft (0.244 m) higher. July 1942 to June 9, 1972, water-stage recorder at site 300 ft (91 m) downstream at datum 0.80 ft (0.244 m) higher (destroyed by flood).

REMARKS.--Records good except those for winter periods, which are fair. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm²). Flow regulated by Pactola Reservoir 25.4 mi (40.9 km) upstream since Aug. 22, 1956 (see station 06411000). Several observations of water quality were made during the year.

AVERAGE DISCHARGE.--42 years, 61.2 ft³/s (1.733 m³/s), 44,300 acre-ft/yr (54.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 50,000 ft³/s (1,420 m³/s) June 9, 1972, gage height, 19.66 ft (5.992 m), from floodmarks, on basis of slope-area measurement of peak flow; minimum, 1.6 ft³/s (0.045 m³/s) Apr. 20, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 12, 13, 1920, reached a stage of 14.4 ft (4.39 m) present datum, from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 409 ft³/s (11.6 m³/s) at 0810 hours, July 25, gage height, 5.23 ft (1.594 m); minimum daily discharge, 6.7 ft³/s (0.19 m³/s) Apr. 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	25	25	23	24	25	21	58	42	69	23	84
2	22	25	24	21	24	24	20	151	40	108	22	83
3	18	24	24	22	23	24	22	151	40	109	13	79
4	19	23	27	23	23	23	23	159	37	100	10	80
5	17	24	23	27	25	24	22	143	36	99	16	74
6	14	25	20	26	26	24	19	147	36	82	30	86
7	12	24	19	23	28	24	18	137	37	69	37	83
8	12	24	20	23	26	24	19	125	36	84	43	55
9	12	24	23	25	25	24	16	104	51	88	54	47
10	13	25	26	24	24	23	17	67	39	108	46	39
11	17	24	28	24	24	23	19	54	37	122	40	41
12	19	25	29	21	28	23	19	68	37	144	34	40
13	17	30	27	24	30	22	12	96	38	163	34	35
14	19	27	25	24	28	22	10	94	39	122	43	44
15	78	27	27	25	30	22	9.3	92	37	114	40	70
16	33	26	28	24	28	22	9.6	97	30	90	40	71
17	25	26	27	22	28	21	6.7	176	19	86	36	55
18	25	25	27	21	27	21	10	121	14	82	25	51
19	25	27	22	26	25	21	17	60	13	74	19	47
20	23	27	20	26	27	21	22	45	17	44	16	52
21	23	27	20	23	25	23	23	70	29	35	20	52
22	23	28	25	24	24	23	20	84	22	45	45	47
23	23	27	29	27	25	24	15	87	12	71	60	45
24	23	24	25	27	26	23	9.5	69	19	63	56	55
25	25	23	24	27	24	22	20	66	23	152	55	60
26	25	27	30	26	24	22	15	56	39	93	60	50
27	26	23	27	23	26	23	15	60	54	63	56	46
28	26	28	26	22	24	23	20	50	69	47	65	43
29	26	24	24	24	---	23	24	43	70	38	61	41
30	25	26	25	24	---	23	35	40	67	31	63	42
31	25	---	24	24	---	22	---	45	---	26	63	---
TOTAL	712	764	770	745	721	708	528.1	2815	1079	2621	1225	1697
MEAN	23.0	25.5	24.8	24.0	25.8	22.8	17.6	90.8	36.0	84.5	39.5	56.6
MAX	78	30	30	27	30	25	35	176	70	163	65	86
MIN	12	23	19	21	23	21	6.7	40	12	26	10	35
AC-FT	1410	1520	1530	1480	1430	1400	1050	5580	2140	5200	2430	3370

CAL YR 1980 TOTAL 15985.0 MEAN 43.7 MAX 125 MIN 12 AC-FT 31710
WTR YR 1981 TOTAL 14385.1 MEAN 39.4 MAX 176 MIN 6.7 AC-FT 28530

06415500 HAWTHORNE DITCH AT RAPID CITY, SD

LOCATION.--Lat 44°04'29", long 103°11'30", in SE¼SE¼NE¼ sec.6, T.1 N., R.8 E., Hydrologic Unit 10120110, Pennington County, on right bank upstream from Cambell Street.

PERIOD OF RECORD.--August 1946 to September 1953 (monthly discharge for irrigation seasons only, published in WSP 1309 and 1729), May 1981 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,160 ft (963 m), from topographic map. Prior to September 1953 at site approximately 1,600 ft (488 m) downstream at different datum. Prior to Oct. 17, 1947, nonrecording gage.

REMARKS.--Records good. Flow completely regulated and is very small during winter months.

EXTREMES FOR CURRENT PERIOD.--Maximum daily discharge during period May to September, 28 ft^3/s (0.79 m^3/s) May 2, 5, 6, gage height, 1.88 ft (0.573 m); minimum daily discharge during period, 2.1 ft^3/s (0.059 m^3/s) June 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1								20	12	20	6.4	13
2								28	12	22	5.8	14
3								26	12	21	5.5	14
4								25	12	21	3.7	14
5								28	12	21	4.1	14
6								28	12	20	4.8	15
7								27	12	20	5.0	16
8								27	12	21	5.0	15
9								26	14	22	5.4	7.5
10								26	10	23	5.4	3.8
11								27	7.0	22	5.1	14
12								24	7.0	22	5.0	16
13								19	7.0	23	5.8	15
14								19	7.0	17	6.3	16
15								19	7.0	15	6.4	14
16								19	6.7	14	6.4	9.3
17								23	6.1	13	6.2	9.1
18								20	5.5	13	5.4	8.9
19								17	5.5	12	5.0	11
20								15	5.8	10	4.9	14
21								16	7.0	10	4.4	14
22								18	8.6	11	2.5	13
23								13	8.9	12	2.6	13
24								8.9	10	8.3	2.5	15
25								7.9	6.7	13	2.3	16
26								7.9	2.1	7.9	2.3	18
27								8.3	3.6	7.8	2.3	18
28								7.3	2.3	8.3	1.9	17
29								7.0	5.6	8.3	1.8	16
30								9.6	19	7.3	1.8	17
31								12	---	6.7	4.0	---
TOTAL								578.9	258.4	472.8	136.0	410.6
MEAN								18.7	8.61	15.2	4.39	13.7
MAX								28	19	23	6.4	18
MIN								7.0	2.1	6.7	1.8	3.8
AC-FT								1150	513	937	270	814

06414700 RAPID CREEK AT EAST MAIN STREET, AT RAPID CITY, SD

LOCATION.--Lat 44°04'45", long 103°12'12", in SE¼NE¼NW¼ sec.6, T.1 N., R.8 E., Pennington County, Hydrologic Unit 10120110, at left downstream corner of bridge on East Main Street.

DRAINAGE AREA.--416 mi² (1,077 km²), revised.

PERIOD OF RECORD.--May 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,169.50 ft (966.064 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Several small diversions above station to municipal park pools and for irrigation of about 320 acres (130 hm²). Flow regulated by Pactola Reservoir 27.4 mi (44.1 km) upstream since Aug. 22, 1956 (see station 06411000). Several observations of water quality were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,080 ft³/s (30.6 m³/s) July 23, 1981, gage height, 10.52 ft (3.206 m); minimum daily discharge, 10 ft³/s (0.28 m³/s) Oct. 7, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,080 ft³/s (30.6 m³/s) at 1905 hours, July 23, gage height, 10.52 ft (3.206 m); minimum daily discharge, 10 ft³/s (0.28 m³/s) Oct. 7.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	18	23	27	23	23	26	22	47	44	75	34	77
2	17	24	25	22	23	24	22	128	42	108	33	80
3	16	23	25	25	23	26	22	135	49	106	26	73
4	15	22	27	24	23	24	23	141	43	100	19	77
5	14	25	27	27	23	25	22	119	39	98	25	71
6	12	24	25	25	23	25	19	125	38	83	36	81
7	10	23	25	23	26	25	18	119	42	72	40	77
8	11	24	21	24	26	26	19	107	39	86	46	56
9	11	25	21	26	26	26	18	91	61	91	54	50
10	12	25	26	24	22	25	17	62	40	106	48	43
11	12	26	27	25	23	26	20	53	40	120	43	41
12	13	26	26	22	28	26	21	65	42	129	37	42
13	15	31	25	24	31	26	15	90	41	152	39	39
14	15	24	24	26	29	25	13	87	51	111	44	45
15	104	24	25	26	32	25	12	87	42	107	41	62
16	37	24	27	24	29	24	13	45	37	89	40	63
17	29	23	26	22	27	24	11	216	28	86	39	53
18	27	23	24	22	28	24	13	118	22	88	29	51
19	26	25	25	26	28	23	19	59	22	77	24	48
20	24	25	29	26	29	23	24	43	25	52	23	50
21	24	24	29	23	28	24	26	58	40	40	25	51
22	21	26	30	24	27	23	21	70	34	54	45	49
23	21	25	30	26	28	23	17	83	24	99	59	46
24	22	21	25	28	28	23	13	61	29	74	58	54
25	25	22	24	27	26	22	20	61	37	218	55	58
26	26	25	32	26	27	22	18	54	51	103	59	51
27	26	24	28	24	28	23	18	73	67	72	59	48
28	23	29	26	23	25	23	21	50	79	58	65	46
29	23	25	24	23	---	23	23	44	78	50	64	44
30	22	27	25	23	---	23	31	41	75	45	64	46
31	21	---	25	23	---	22	---	47	---	37	62	---
TOTAL	692	737	805	756	739	749	571	2627	1301	2786	1335	1672
MEAN	22.3	24.6	26.0	24.4	26.4	24.2	19.0	84.7	43.4	89.9	43.1	55.7
MAX	104	31	32	28	32	26	31	216	79	218	65	81
MIN	10	21	21	22	22	22	11	41	22	37	19	39
AC-FT	1370	1460	1600	1500	1470	1490	1130	5210	2580	5530	2650	3320

WTR YR 1981 TOTAL 14770 MEAN 40.5 MAX 218 MIN 10 AC-FT 29300

06416000 RAPID CREEK BELOW HAWTHORNE DITCH, AT RAPID CITY, SD

LOCATION.--Lat 44°04'00", long 103°10'25", in NW¼NW¼NE¼ sec.8, T.1 N., R.8 E., Pennington County, Hydrologic Unit 10120110, 1.5 mi (2.4 km) downstream from diversion to Hawthorne Ditch on East St. Patrick Street.

DRAINAGE AREA.--418 mi² (1,083 km²), revised.

PERIOD OF RECORD.--August 1946 to October 1953 (monthly discharge only, published in WSP 1309 and 1729), May 1980 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,124.18 (952.250 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 27, 1947, at site 700 ft (210 m) downstream at datum 0.25 ft (0.076 m) lower, and Nov. 28, 1947, to October 1953, at present site, at different datum.

REMARKS.--Records good except those for winter periods, which are poor. Diversions above station for irrigation of about 3,000 acres (12 km²). Flow regulated by Deerfield Dam on Castle Creek since December 1945 (see station 06409500) and by Pactola Reservoir 30 mi (48 km) upstream since August 1956 (see station 06411000). Several observations of water quality were made during the year.

AVERAGE DISCHARGE.--7 years (1946-53), 62.3 ft³/s (1.764 m³/s).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 1972 reached a stage of 17.1 ft (5.21 m) present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 843 ft³/s (23.9 m³/s) at 2000 hours, July 23, gage height, 13.89 ft (4.234 m); minimum daily discharge, 2.1 ft³/s (0.059 m³/s) Apr. 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	15	28	25	25	24	19	27	35	49	20	57
2	15	15	27	23	26	23	18	109	33	85	19	58
3	9.7	15	26	26	26	24	19	120	39	78	15	53
4	9.7	15	26	25	25	21	20	129	33	72	9.1	56
5	8.9	18	26	27	25	22	20	100	31	72	15	51
6	4.3	18	26	26	24	22	17	108	29	60	24	60
7	3.3	18	26	24	22	21	16	101	32	49	29	56
8	3.9	18	26	23	21	22	15	87	29	59	32	39
9	5.7	20	26	24	20	22	12	68	54	60	40	38
10	7.6	23	29	25	21	22	10	41	34	72	37	35
11	7.7	24	28	25	21	21	8.0	51	35	84	32	26
12	6.5	24	27	23	22	21	6.5	45	36	97	28	26
13	6.5	25	26	24	22	21	4.2	74	36	118	29	22
14	10	25	25	26	23	21	2.1	67	46	85	35	26
15	109	25	26	26	24	20	2.5	66	35	81	33	44
16	27	24	27	27	25	20	2.5	78	30	62	32	49
17	16	24	27	26	26	20	3.0	221	22	60	31	42
18	15	23	27	26	26	20	3.9	104	16	64	23	39
19	15	25	26	26	25	19	5.2	46	16	56	18	35
20	15	27	24	28	26	19	8.9	32	18	34	16	36
21	14	27	26	25	25	20	12	48	32	24	20	36
22	14	27	26	25	24	20	8.3	57	23	33	37	35
23	14	27	28	27	24	21	6.2	78	12	96	51	32
24	14	25	27	28	25	21	7.5	59	15	58	49	37
25	15	23	27	28	24	20	16	52	23	218	47	42
26	15	26	26	27	25	20	9.5	47	38	81	51	34
27	17	24	28	25	26	20	9.1	71	51	52	49	30
28	15	27	27	25	23	21	16	50	63	38	55	28
29	15	25	25	25	---	20	19	40	63	30	54	27
30	15	27	26	25	---	19	21	34	50	27	54	27
31	15	---	26	25	---	20	---	37	---	22	52	---
TOTAL	473.8	679	823	790	671	647	337.4	2219	1009	2076	1036.1	1176
MEAN	15.3	22.6	26.5	25.5	24.0	20.9	11.2	71.6	33.6	67.0	33.5	39.2
MAX	109	27	29	28	26	24	21	221	63	218	55	60
MIN	3.3	15	24	23	20	19	2.1	27	12	22	9.1	22
AC-FT	940	1350	1630	1570	1330	1280	669	4400	2000	4120	2060	2330

WTR YR 1981 TOTAL 11939.3 MEAN 32.7 MAX 221 MIN 2.1 AC-FT 23680

06421500 RAPID CREEK NEAR FARMINGDALE, SD

LOCATION.--Lat 43°56'31", long 102°51'12", in SW¼SW¼SW¼ sec.19, T.1 S., R.11 E., Pennington County, Hydrologic Unit 10120110, on right bank at downstream side of bridge, 2 mi (3.2 km km) southeast of Farmingdale and 4.8 mi (7.7 km) downstream from Antelope Creek.

DRAINAGE AREA.--602 mi^2 (1,559 km^2).

PERIOD OF RECORD.--July 1946 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,700 ft (823 m), from topographic map. Prior to Sept. 19, 1947, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Pactola Reservoir 67 mi (108 km) upstream since August 22, 1956 (see station 06411000). Diversions for irrigation of about 10,000 acres (4,050 hm^3) above station.

AVERAGE DISCHARGE.--35 years, 54.3 ft^3/s (1.538 m^3/s), 39,340 acre-ft/yr (48.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,320 ft^3/s (207 m^3/s) June 10, 1972, gage height, 11.85 ft (3.612 m), from floodmarks, from rating curve extended above 400 ft^3/s (11.3 m^3/s) on basis of contracted-opening and flow-over-road measurement of peak flow; no flow at times in 1949, 1952-56, 1958-63, 1969-71.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 468 ft^3/s (13.3 m^3/s) at 1715 hours, July 26, gage height, 7.47 ft (2.277 m); minimum daily, 0.80 ft^3/s (0.023 m^3/s) Aug. 27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15	29	43	35	25	40	31	13	22	23	45	16
2	15	29	33	35	27	38	31	14	20	24	33	13
3	14	28	31	35	30	40	28	17	16	61	25	12
4	18	29	30	35	30	39	23	33	11	51	16	17
5	12	28	30	35	30	39	24	39	14	50	17	26
6	9.4	29	32	33	28	35	26	19	10	42	17	30
7	7.2	27	32	33	28	39	26	31	8.0	23	18	27
8	6.6	25	32	33	26	39	24	38	13	12	22	32
9	8.6	23	30	33	23	38	18	28	19	1.8	26	31
10	7.5	24	30	35	20	38	8.1	21	43	7.5	34	25
11	9.4	27	32	37	24	36	3.6	14	39	8.2	32	25
12	9.4	28	32	37	26	32	3.0	6.5	53	17	25	25
13	7.2	42	33	37	28	32	2.4	2.6	41	45	15	19
14	9.4	51	34	36	30	29	1.8	6.2	46	98	25	15
15	22	47	34	34	30	27	1.5	15	53	75	29	13
16	179	43	34	32	30	25	1.9	15	51	78	31	15
17	58	41	34	30	32	26	1.9	36	47	50	22	23
18	36	41	31	30	34	20	2.7	260	37	49	27	23
19	29	40	29	32	38	25	3.7	125	27	51	23	21
20	27	41	28	34	44	25	5.2	58	20	80	6.8	20
21	27	41	28	36	47	27	7.0	37	14	43	2.0	11
22	27	41	29	38	49	29	8.0	34	15	28	2.2	13
23	23	41	29	38	46	29	7.2	69	19	16	4.0	5.6
24	23	41	28	36	46	28	6.0	95	16	84	16	7.2
25	25	41	30	34	48	23	7.0	62	13	124	12	11
26	25	38	30	34	47	22	9.0	52	6.5	363	6.2	31
27	27	43	32	31	41	21	7.0	47	4.9	173	.80	24
28	29	41	34	31	40	27	6.5	58	9.8	109	8.6	18
29	32	41	35	28	---	29	9.0	57	28	73	6.5	18
30	31	40	37	27	---	29	11	36	26	61	11	20
31	31	---	37	26	---	31	---	27	---	56	14	---
TOTAL	799.7	1080	993	1040	947	957	344.5	1365.3	738.0	1976.5	572.10	586.8
MEAN	25.8	36.0	32.0	33.5	33.8	30.9	11.5	44.0	24.6	63.8	18.5	19.6
MAX	179	51	43	38	49	40	31	260	53	363	45	32
MIN	7.2	23	28	26	20	20	1.5	2.6	4.9	1.8	.80	5.6
AC-FT	1590	2140	1970	2060	1880	1900	683	2710	1460	3920	1130	1160

CAL YR 1980 TOTAL 13803.00 MEAN 37.7 MAX 533 MIN 7.2 AC-FT 27380
WTR YR 1981 TOTAL 11399.90 MEAN 31.2 MAX 363 MIN .80 AC-FT 22610

BEST DOCUMENT AVAILABLE

06422500 BOXELDER CREEK NEAR NEMO, SD

LOCATION.--Lat 44°08'38", long 103°27'16", in SE¼SE¼ sec.12, T.2 N., R.5 E., Lawrence County, Hydrologic Unit 10120111, on right bank at ranch 0.2 mi (0.3 km) upstream from county line, 0.9 mi (1.4 km) downstream from Jim Creek and 4.5 mi (7.2 km) southeast of Nemo.

DRAINAGE AREA.--96 mi^2 (249 km^2), approximately.

PERIOD OF RECORD.--July 1945 to July 1947, May 1966 to current year.

GAGE.--Water-stage recorder. Datum of gage is 4,320.27 ft (1,316.818 m) National Geodetic Vertical Datum of 1929. July 1945 to July 1947 nonrecording gage at site 100 ft (30 m) upstream at different datum. May 17, 1966, to June 9, 1972, water-stage recorder (destroyed by flood) and June 10, 1972, to Aug. 8, 1972, nonrecording gage, both at site 100 ft (30 m) upstream at datum 2.00 ft (0.610 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--16 years (water years 1946, 1967-81), 18.9 ft^3/s (0.535 m^3/s), 13,700 acre-ft/yr (16.9 hm^3/yr); median of yearly mean discharges, 18 ft^3/s (0.51 m^3/s) 13,000 acre-ft/yr (16 hm^3/yr). The figure published in the 1980 report was in error; the correct figure is median of yearly mean discharge, 19 ft^3/s (0.54 m^3/s) 13,800 acre-ft/yr (17 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 30,100 ft^3/s (852 m^3/s) June 9, 1972, gage height, 20.4 ft (6.22 m), site and datum then in use, 22.0 ft (6.71 m), present site and datum, from floodmarks, from rating curve extended above 600 ft^3/s (17.0 m^3/s) on basis of slope-area measurement of peak flow; minimum daily, 0.70 ft^3/s (0.020 m^3/s) Dec. 30, 1968.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of 1911 reached a stage of about 16 ft (4.9 m), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26 ft^3/s (0.74 m^3/s) at 0245 hours, May 18, gage height, 2.06 ft (0.628 m), no peak above base of 100 ft^3/s (2.83 m^3/s); minimum daily discharge, 1.4 ft^3/s (0.040 m^3/s) Aug. 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.4	3.5	3.4	5.2	4.0	2.4	3.4	2.5	6.6	5.2	5.7	1.9
2	2.3	3.5	3.5	5.4	4.0	2.3	3.6	2.5	6.6	8.1	5.2	1.8
3	2.4	3.4	3.6	5.4	4.2	2.3	3.7	2.8	6.7	9.0	4.9	1.9
4	2.4	3.4	3.6	5.0	4.2	2.2	3.8	3.7	8.3	7.2	4.6	1.9
5	2.4	3.2	3.5	4.2	4.2	2.2	3.6	4.3	7.7	5.8	4.6	1.9
6	2.4	3.2	3.7	4.8	4.2	2.2	3.3	4.1	7.1	4.8	4.6	9.2
7	2.4	3.2	3.9	5.6	4.2	2.2	3.5	4.1	6.6	4.0	4.5	7.1
8	2.3	3.2	4.0	5.2	4.0	2.4	3.7	3.9	6.0	3.4	3.7	5.0
9	2.3	3.2	3.9	4.0	3.7	2.3	3.3	3.9	6.8	3.1	3.7	3.9
10	2.3	3.2	3.9	4.6	3.4	2.3	3.2	3.7	7.0	2.8	3.9	3.3
11	2.3	3.2	3.9	4.4	3.1	2.4	3.1	3.7	7.0	2.8	3.6	3.0
12	2.3	3.2	4.0	4.0	3.3	2.5	3.2	3.7	6.8	2.7	3.2	2.8
13	2.3	3.2	3.7	3.3	3.3	2.4	3.1	4.0	7.2	3.7	3.0	2.6
14	2.4	3.2	3.6	3.5	3.3	2.6	2.9	4.0	6.8	4.3	3.2	2.4
15	4.4	3.1	4.2	3.7	3.1	2.6	2.9	4.0	6.6	4.9	3.0	2.4
16	5.2	3.0	5.8	3.7	3.1	2.3	2.9	4.3	6.4	4.5	3.0	2.4
17	4.7	3.2	6.2	3.9	3.1	2.4	2.8	11	6.0	4.3	3.0	2.4
18	4.0	3.4	5.8	3.6	3.2	2.5	2.8	23	5.6	5.0	2.9	2.3
19	3.8	3.4	5.6	3.3	3.2	2.5	2.8	13	5.6	5.8	2.3	2.2
20	4.0	3.1	5.6	3.6	3.2	2.5	3.0	8.6	5.8	4.6	2.2	2.0
21	4.0	3.1	5.6	3.1	3.2	3.0	2.8	7.0	7.4	3.9	2.2	2.2
22	4.0	3.2	5.6	3.0	3.1	3.0	2.8	6.5	7.0	3.7	2.1	2.4
23	3.8	3.4	5.8	2.9	3.0	3.0	2.8	12	6.4	4.2	1.9	2.6
24	3.3	3.2	5.8	2.8	2.9	3.1	2.8	19	5.8	3.8	1.6	2.5
25	3.4	3.0	5.6	7.1	2.8	3.1	2.5	11	5.4	6.5	1.6	2.5
26	3.2	3.0	5.2	6.2	2.7	3.1	2.5	9.3	5.4	18	1.4	2.4
27	3.4	3.1	5.0	5.0	2.6	3.2	2.5	9.4	5.4	12	1.6	2.4
28	3.2	3.0	5.8	4.0	2.5	3.2	2.6	8.6	5.6	9.4	1.8	2.2
29	3.2	3.4	5.6	3.3	---	3.4	2.5	7.6	6.0	7.8	1.8	2.1
30	3.5	3.1	5.0	3.5	---	3.4	2.5	7.2	5.8	6.8	2.0	2.2
31	3.5	---	5.2	3.2	---	3.4	---	7.0	---	6.2	1.9	---
TOTAL	97.5	96.5	145.6	130.5	94.8	82.4	90.9	219.4	193.4	178.3	94.7	85.9
MEAN	3.15	3.22	4.70	4.21	3.39	2.66	3.03	7.08	6.45	5.75	3.05	2.86
MAX	5.2	3.5	6.2	7.1	4.2	3.4	3.8	23	8.3	18	5.7	9.2
MIN	2.3	3.0	3.4	2.8	2.5	2.2	2.5	2.5	5.4	2.7	1.4	1.8
AC-FT	193	191	289	259	188	163	180	435	384	354	188	170

CAL YR 1980 TOTAL 1973.5 MEAN 5.39 MAX 25 MIN 1.6 AC-FT 3910
WTR YR 1981 TOTAL 1509.9 MEAN 4.14 MAX 23 MIN 1.4 AC-FT 2990

06423010 BOXELDER CREEK NEAR RAPID CITY, SD

LOCATION.--Lat 44°07'54", long 103"17'54", in NW¼SE¼ sec.17, T.2 N., R.7 E., Pennington County, Hydrologic Unit 10120111, near center span on downstream side of bridge on State Highway 79, and 4.0 mi (6.4 km) northwest of Rapid City.

PERIOD OF RECORD.--May 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,450 ft (1,050 m), from topographic map.

REMARKS.--Records good. Considerable loss in sinkholes in reach above gage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 253 ft^3/s (7.16 m^3/s) May 18, 1978, gage height, 31.14 ft (9.491 m), from floodmark; no flow for many days.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

No flow during year

06423500 CHEYENNE RIVER NEAR WASTA, SD

LOCATION.--Lat 44°04'52", long 102°24'03", in NE¼NE¼NW¼ sec.2, T.1 N., R.14 E., Pennington County, Hydrologic Unit 10120111, on left bank at downstream side of highway bridge, 200 ft (61 m) downstream from Chicago and North Western Transportation Co. bridge, 3.0 mi (4.8 m) east of Wasta, and 8.6 mi (13.8 m) downstream from Boxelder Creek.

DRAINAGE AREA.--12,800 mi² (33,200 km²), approximately.

PERIOD OF RECORD.--July 1914 to June 1915, August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309. Records for Feb. 19-28, 1930, published in WSP 701, have been found to be unreliable and should not be used.

REVISED RECORDS.--WSP 786: Drainage area. WSP 1279: 1930(M), 1931, 1937. See also Period of Record.

GAGE.--Water-stage recorder. Datum of gage is 2,260.78 ft (689.086 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 1, 1940, nonrecording gage at site 50 ft (15 m) upstream; Aug. 1, 1940, to Dec. 3, 1940, nonrecording gage and Dec. 4, 1940, to Sept. 30, 1968, water-stage recorder at present site all at datum 2.00 ft (0.610 m) higher. Oct. 1, 1968, to Sept. 30, 1972, at datum 1.00 ft (0.305 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Angostura Reservoir 108 mi (174 km) upstream (see station 06401000) since October 1949 and by upstream reservoirs on Rapid Creek since August 1956. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--50 years (water years 1929-31, 1935-81), 347 ft³/s (9.827 m³/s), 251,400 acre-ft/yr (310 hm³/yr); median of yearly mean discharges, 290 ft³/s (8.21 m³/s), 210,000 acre-ft/yr (259 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge observed, 46,300 ft³/s (1,310 m³/s) May 6, 1932, gage height, 13.28 ft (4.048 m), present datum, from rating curve extended above 11,000 ft³/s (312 m³/s) on basis of an incomplete discharge measurement at gage height 10.65 ft (3.246 m), present datum; maximum gage height observed, 14.5 ft (4.42 m), present datum, June 13, 1915; minimum discharge, 0.6 ft³/s (0.017 m³/s) July 27, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1920 reached a stage of 18 ft (5.5 m), present datum, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,250 ft³/s (120 m³/s) at 1830 hours, July 13, gage height, 5.62 ft (1.713 m); maximum gage height, 7.56 ft (2.304 m) Feb. 22 (backwater from ice); minimum daily discharge, 22 ft³/s (0.62 m³/s) June 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	58	87	72	140	95	105	86	49	86	26	163	57
2	57	85	69	130	80	94	87	44	221	449	163	61
3	57	85	64	140	80	89	92	46	145	541	97	54
4	55	85	66	140	85	86	89	59	82	178	83	49
5	60	83	70	150	85	88	82	103	63	119	83	51
6	60	83	66	140	68	81	82	146	54	91	271	59
7	55	85	64	130	62	79	80	205	53	76	256	69
8	53	87	64	130	52	80	79	547	48	66	137	68
9	50	83	64	130	42	74	80	169	59	53	104	80
10	48	81	70	120	35	96	75	117	62	44	97	83
11	47	79	70	120	42	106	65	91	64	39	139	78
12	48	84	70	130	70	105	64	80	72	34	144	72
13	51	92	70	140	100	102	56	70	212	1130	115	69
14	53	101	70	130	150	100	55	68	331	902	147	63
15	163	138	75	120	200	98	54	60	450	524	107	61
16	1150	162	75	120	250	93	53	63	150	1070	117	62
17	745	124	70	130	230	91	52	73	99	193	108	66
18	586	103	65	140	190	90	57	427	74	142	112	74
19	175	106	65	150	200	89	54	501	66	222	89	79
20	112	109	65	150	250	87	52	399	54	212	74	80
21	97	103	70	150	400	94	57	259	57	152	91	71
22	93	103	70	160	450	95	66	185	43	112	50	62
23	89	113	60	170	417	99	92	154	48	440	48	58
24	83	99	70	160	102	95	90	168	44	839	53	59
25	80	89	100	150	112	90	75	178	35	445	51	106
26	80	108	130	130	114	84	62	137	22	1560	59	87
27	83	90	160	130	123	81	56	116	26	670	61	67
28	85	108	170	130	99	84	55	167	95	353	56	70
29	85	97	170	120	---	87	53	179	51	253	54	67
30	87	110	160	110	---	87	52	139	29	199	60	58
31	89	---	150	110	---	87	---	108	---	163	61	---
TOTAL	4634	2962	2674	4200	4183	2816	2052	5271	2895	11017	3250	2040
MEAN	149	98.7	86.3	135	149	90.8	68.4	170	96.5	355	105	68.0
MAX	1150	162	170	170	450	106	92	547	450	1560	271	106
MIN	47	79	60	110	35	74	52	44	22	26	48	49
AC-FT	9190	5880	5300	8330	8300	5590	4070	10460	5740	21850	6450	4050

CAL YR 1980 TOTAL 47087 MEAN 129 MAX 1520 MIN 16 AC-FT 93400
WTR YR 1981 TOTAL 47994 MEAN 131 MAX 1560 MIN 22 AC-FT 95200

06425100 ELK CREEK NEAR RAPID CITY, SD

LOCATION.--Lat 44°14'25", long 103°09'03", in NE¼NE¼ sec.9, T.3 N., R.8 E., Meade County, Hydrologic Unit 10120110, on section line near right upstream corner of county road bridge, 1.7 mi (2.7 km) downstream from Morris Creek tributary and 10 mi (16.1 km) north of Exit 61 and I-90 northeast of Rapid City.

DRAINAGE AREA.--190 mi² (492 km²).

PERIOD OF RECORD.--November 1978 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 2,950 ft (900 m), from topographic map.

REMARKS.--Records fair. Some flow is pumped from stream for irrigation. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 379 ft³/s (10.7 m³/s) June 14, 1980, gage height, 7.12 ft (2.170 m); maximum gage height, 7.28 ft (2.219 m) Aug. 8, 1979; no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 65 ft³/s (1.84 m³/s) at 0615 hours, July 2, gage height, 5.85 ft (1.783 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.78	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	16	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.82	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.5	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.59	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.17	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.46	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	14	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.10	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	36.93	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	1.19	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	16	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	73	.00	.00

CAL YR 1980 TOTAL 363.08 MEAN .99 MAX 38 MIN .00 AC-FT 720
WTR YR 1981 TOTAL 36.93 MEAN .10 MAX 16 MIN .00 AC-FT 73

06425500 ELK CREEK NEAR ELM SPRINGS, SD

LOCATION.--Lat 44°14'54", long 102°30'10", in SW¼NW¼ sec.1, T.3 N., R.13 E., Meade County, Hydrologic Unit 10120111, on left bank near downstream end of county highway bridge, 1.4 mi (2.3 km) downstream from Hay Draw, 5.0 mi (8.0 km) southeast of Elm Springs, and 7.0 mi (11.3 km) upstream from mouth.

DRAINAGE AREA.--540 mi² (1,400 km²), approximately.

PERIOD OF RECORD.--July 1949 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,304.49 ft (702.409 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 2, 1976, nonrecording gage, and prior to Feb. 1, 1967, at site 350 ft (107 m) downstream at present datum.

REMARKS.--Records fair.

AVERAGE DISCHARGE.--32 years, 22.0 ft³/s (0.623 m³/s), 15,940 acre-ft/yr (19.6 hm³/yr); median of yearly mean discharges, 20 ft³/s (0.57 m³/s), 14,500 acre-ft/yr (18 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,540 ft³/s (242 m³/s) Mar. 29, 1952, gage height, 10.61 ft (3.234 m), from floodmarks, site and datum then in use, from rating curve extended above 5,100 ft³/s (144 m³/s); maximum gage height, 11.0 ft (3.35 m) May 29, 1962, from floodmarks, site and datum then in use; no flow for long periods in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, about 17 ft (5.2 m), at former site, in May 1920, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 124 ft³/s (3.51 m³/s) at 2300 hours, Aug. 13, gage height, 5.72 ft (1.743 m), no other peak above base of 400 ft³/s (11.3 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.7	.00
14	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	7.5	.00
15	.50	.00	.00	.00	.02	.00	.00	.00	.00	.00	.02	.00
16	.95	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00	.00
17	.22	.00	.00	.00	.17	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.19	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	1.67	.00	.00	.00	.82	.00	.00	.00	.00	.00	14.22	.00
MEAN	.054	.000	.000	.000	.029	.000	.000	.000	.000	.000	.46	.000
MAX	.95	.00	.00	.00	.19	.00	.00	.00	.00	.00	7.5	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	3.3	.00	.00	.00	1.6	.00	.00	.00	.00	.00	28	.00

CAL YR 1980 TOTAL 207.92 MEAN .57 MAX 76 MIN .00 AC-FT 412
WTR YR 1981 TOTAL 16.71 MEAN .046 MAX 7.5 MIN .00 AC-FT 33

06427000 KEYHOLE RESERVOIR NEAR MOORCROFT, WY

LOCATION.--Lat 44°22'55", long 104°46'45", in NW¼NW¼ sec.27, T.51 N., R.66 W., Crook County, Hydrologic Unit 10120201, at reservoir dam on Belle Fourche River 12 mi (19 km) northeast of Moorcroft.

DRAINAGE AREA.--2,000 mi^2 (5,180 km^2), approximately.

PERIOD OF RECORD.--March 1952 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929 (Bureau of Reclamation datum). Prior to May 15, 1958, and Oct. 1, 1968, to Mar. 13, 1970, nonrecording gages, and May 15, 1958, to Sept. 30, 1968, water-stage recorder, all at present site and datum.

REMARKS.--Reservoir is formed by a zoned earth-fill dam completed by the Bureau of Reclamation Oct. 25, 1952. Storage began Feb. 12, 1952. Dead storage, below elevation 4,036.0 ft (1,230.17 m), 1,170 acre-ft (1.44 hm^3). Inactive storage, between elevations 4,036.0 ft (1,230.17 m) and 4,051.0 ft (1,234.74 m), 8,310 acre-ft (10.2 hm^3). Total capacity below elevation 4,099.3 ft (1,249.47 m), crest of spillway, 199,900 acre-ft (246 hm^3). From capacity table put into use May 1, 1981: Inactive storage, 7,950 acre-ft (9.80 hm^3). Total capacity, 185,800 acre-ft (229 hm^3). Siltation has eliminated dead storage. Figures given herein represent total contents. The reservoir provides flood control and water for irrigation in Wyoming and near Belle Fourche, SD.

COOPERATION.--Records furnished by the Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 200,744 acre-ft (248 hm^3) May 21, 1978, elevation, 4,100.38 ft (1,249.796 m); minimum daily contents (since appreciable storage was attained), 6,030 acre-ft (7.43 hm^3) Mar. 8, 9, 1955, elevation, 4,046.35 ft (1,233.327 m).

EXTREMES FOR CURRENT YEAR.--Maximum contents, 96,399 acre-ft (119 hm^3) Oct. 1, elevation, 4,086.56 ft (1,245.583 m); minimum, 34,705 acre-ft (42.8 hm^3) Sept. 30, elevation, 4,071.92 ft (1,241.121 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents
Sept. 30	4086.59	96566	
Oct. 31	4086.04	93505	-3061
Nov. 30	4085.79	92166	-1339
Dec. 31	4085.86	92538	+372
CAL YR 1980			-41468
Jan. 31	4085.89	92698	+160
Feb. 28	4085.89	92698	0
Mar. 31	4086.15	94117	+1419
Apr. 30	4084.48	85321	-8796
May 1	4084.48	*79201	-6120
May 31	4081.20	66822	-12379
June 30	4078.08	54521	-12301
July 31	4076.02	47236	-7285
Aug. 31	4073.51	39240	-7996
Sept. 30	4071.92	34705	-4535
WTR YR 1981			-61861

*From capacity table put into use May 1, 1981.

06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°44'59", long 104°02'49", in NE¼NW¼NW¼ sec.18, T.9 N., R.1 E., Butte County, Hydrologic Unit 10120202, on left bank 0.3 mi (0.5 km) downstream from State line, 3.7 mi (6.0 km) downstream from Oak Creek and 11 mi (18 km) northwest of Belle Fourche, SD.

DRAINAGE AREA.--3,280 mi² (8,500 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--December 1946 to current year. Records for water year 1947 incomplete, yearly estimate published in WSP 1729.

GAGE.--Water-stage recorder. Datum of gage is 3,095.7 ft (943.57 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods and period of no gage-height record, July 25 to Aug. 5, which are poor. Diversions above station for irrigation of about 5,400 acres (2,200 hm²). Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm³), 143 mi (230 km) upstream since Oct. 25, 1952. Water-quality records for the station are published in the annual report "Water Resources Data for Wyoming."

AVERAGE DISCHARGE.--35 years, 90.6 ft³/s (2.566 m³/s), 65,640 acre-ft/yr (80.9 hm³/yr); median of yearly mean discharges, 91 ft³/s (2.58 m³/s), 65,900 acre-ft/yr (81 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,400 ft³/s (125 m³/s) June 18, 1962, gage height, 15.59 ft (4.752 m); no flow at times most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,180 ft³/s (90.1 m³/s) July 25, gage height, 12.90 ft (3.932 m); minimum daily, 7.0 ft³/s (0.20 m³/s) Feb. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	14	8.0	9.0	8.0	24	12	191	280	158	290	147
2	20	13	9.0	9.0	8.0	22	12	192	275	171	290	150
3	19	13	10	9.0	8.4	24	15	197	275	160	280	148
4	18	13	11	9.0	8.8	21	14	201	312	162	270	150
5	17	13	11	9.0	8.8	19	13	209	277	162	226	150
6	16	13	11	8.5	8.4	18	13	209	264	158	90	157
7	15	12	12	8.0	8.0	18	12	203	236	151	46	168
8	14	12	12	8.0	8.0	18	12	206	191	143	46	160
9	14	12	13	8.0	7.5	17	11	214	181	139	46	154
10	14	12	13	8.0	7.0	16	10	211	176	138	47	153
11	14	12	14	8.0	7.6	16	10	208	168	138	47	148
12	14	12	14	8.4	8.5	16	9.3	211	174	164	48	148
13	14	14	14	9.0	9.4	15	8.5	209	209	189	48	104
14	14	14	15	8.5	10	15	8.5	208	188	202	54	58
15	22	14	16	8.0	12	14	7.8	205	171	248	106	41
16	53	12	17	7.6	11	14	7.8	202	171	309	121	33
17	30	12	14	8.0	12	13	103	205	182	243	129	28
18	32	17	12	8.0	14	13	154	205	170	305	126	26
19	25	15	12	9.0	16	14	165	202	165	265	122	24
20	21	12	12	9.0	22	14	168	198	164	271	120	22
21	19	12	13	9.4	28	14	174	168	170	261	122	20
22	17	15	13	9.8	27	14	179	121	174	263	125	18
23	17	12	12	10	34	14	211	241	164	263	125	17
24	15	12	10	9.5	36	14	192	282	160	273	143	17
25	15	12	11	9.0	26	13	191	285	157	1000	136	17
26	15	13	12	9.0	23	13	194	278	153	950	144	16
27	14	13	12	8.5	24	13	191	302	156	800	142	16
28	15	13	12	8.0	23	13	194	307	158	640	143	15
29	14	12	11	8.0	---	13	195	285	156	480	144	15
30	14	11	10	8.0	---	12	195	278	160	320	147	15
31	14	---	9.5	8.0	---	12	---	280	---	260	144	---
TOTAL	576	386	375.5	266.2	426.4	486	2681.9	6913	5839	9386	4069	2335
MEAN	18.6	12.9	12.1	8.59	15.2	15.7	89.4	223	195	303	131	77.8
MAX	53	17	17	10	36	24	211	307	312	1000	290	168
MIN	14	11	8.0	7.6	7.0	12	7.8	121	153	138	46	15
AC-FT	1140	766	745	528	846	964	5320	13710	11580	18620	8070	4630

CAL YR 1980 TOTAL 19698.3 MEAN 53.8 MAX 386 MIN 4.0 AC-FT 39070
WTR YR 1981 TOTAL 33740.0 MEAN 92.4 MAX 1000 MIN 7.0 AC-FT 66920

06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1966 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	DIS-CHARGE, IN CUBIC FEET PER SECOND (00060)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	TUR-BID-ITY (NTU) (00076)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L) (00310)
OCT								
07...	1620	15	2200	--	17.5	--	--	--
21...	1145	19	1690	8.0	10.0	650	9.6	2.3
NOV								
03...	1635	13	2100	--	6.5	--	--	--
19...	1200	15	2150	8.2	1.5	9.0	11.9	--
DEC								
15...	1615	16	2170	7.8	1.0	3.0	12.6	--
JAN								
12...	1630	8.4	2140	--	.0	--	--	--
19...	1630	9.0	2240	8.0	.5	3.0	12.8	--
FEB								
10...	1445	14	1790	7.8	1.0	7.0	13.3	--
MAR								
02...	1545	24	1720	--	7.0	--	--	--
19...	1500	14	2070	8.2	10.0	4.0	11.3	--
APR								
06...	1600	13	2160	--	12.0	--	--	--
21...	1745	174	1300	7.9	13.5	330	8.5	--
MAY								
12...	1200	211	1220	--	11.0	--	--	--
22...	1345	121	1290	8.0	16.5	90	8.4	--
JUN								
01...	1710	260	1150	--	22.0	--	--	--
18...	0845	170	1280	7.9	16.0	130	8.3	--
JUL								
08...	1730	140	1300	--	25.0	--	--	--
20...	1845	271	1200	7.9	27.0	450	--	--
AUG								
05...	1730	226	750	--	22.5	--	--	--
20...	1725	120	1190	8.0	27.0	350	7.1	--
SEP								
08...	1730	160	1020	--	20.5	--	--	--
23...	1400	17	1040	8.3	19.0	15	8.9	--

BEST DOCUMENT AVAILABLE

06428500 BELLE FOURCHE RIVER AT WYOMING-SOUTH DAKOTA STATE LINE--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	HARD-NESS (MG/L AS CACO3) (00900)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
OCT									
07...	--	--	--	--	--	--	--	--	--
21...	140	700	180	58	120	2.0	8.0	80	850
NOV									
03...	--	--	--	--	--	--	--	--	--
19...	K19	1100	300	88	72	.9	8.1	160	1200
DEC									
15...	K6	1200	340	88	140	1.8	9.0	190	1300
JAN									
12...	--	--	--	--	--	--	--	--	--
19...	K1	1100	310	90	160	2.1	9.8	210	1300
FEB									
18...	K1	870	140	130	120	1.8	7.7	160	960
MAR									
02...	--	--	--	--	--	--	--	--	--
19...	K1	1000	280	79	140	1.9	8.4	160	1100
APR									
06...	--	--	--	--	--	--	--	--	--
21...	710	400	100	36	140	3.1	9.0	170	490
MAY									
12...	--	--	--	--	--	--	--	--	--
22...	130	390	93	39	150	3.3	8.3	190	490
JUN									
01...	--	--	--	--	--	--	--	--	--
18...	440	390	90	39	140	3.1	8.4	170	480
JUL									
08...	--	--	--	--	--	--	--	--	--
20...	400	370	92	34	130	2.9	9.0	--	460
AUG									
05...	--	--	--	--	--	--	--	--	--
20...	220	420	95	44	140	3.0	9.4	170	530
SEP									
08...	--	--	--	--	--	--	--	--	--
23...	110	670	170	60	170	2.9	11	190	830

DATE	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)
OCT								
07...	--	--	--	--	--	--	--	--
21...	9.4	.8	6.2	1260	1.7	65.7	.05	.120
NOV								
03...	--	--	--	--	--	--	--	--
19...	10	.9	5.9	1800	2.5	72.9	.01	.080
DEC								
15...	13	1.0	5.6	1960	2.7	64.7	.00	.040
JAN								
12...	--	--	--	--	--	--	--	--
19...	10	.9	7.2	2020	2.8	49.1	.00	.000
FEB								
18...	8.2	.8	.0	1460	2.0	55.2	.00	.010
MAR								
02...	--	--	--	--	--	--	--	--
19...	12	1.0	1.0	1700	2.3	64.3	.02	.000
APR								
06...	--	--	--	--	--	--	--	--
21...	17	.8	7.9	910	1.2	428	.01	.060
MAY								
12...	--	--	--	--	--	--	--	--
22...	30	.9	.0	919	1.3	300	.03	.270
JUN								
01...	--	--	--	--	--	--	--	--
18...	36	.9	1.9	900	1.2	413	.00	.020
JUL								
08...	--	--	--	--	--	--	--	--
20...	21	1.0	3.0	850	1.2	622	.32	.000
AUG								
05...	--	--	--	--	--	--	--	--
20...	18	.7	4.5	950	1.3	308	.42	1.47
SEP								
08...	--	--	--	--	--	--	--	--
23...	17	1.2	5.4	1400	1.9	64.3	.00	.020

K Non-ideal colony count.

06429500 COLD SPRINGS CREEK AT BUCKHORN, WY

LOCATION.--Lat 44°09'14", long 104°04'39", in NW¼ sec.9, T.48 N., R.60 W., Weston County, Hydrologic Unit 10120303, on right shoulder of Cold Springs Creek road, 155 ft (47 m) upstream from centerline of U.S. Highway 85, and 0.5 mi (0.8 km) northeast of Buckhorn.

DRAINAGE AREA.--19.0 mi² (49.2 km²).

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 6,090 ft (1,855 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--7 years, 4.73 ft³/s (0.134 m³/s), 3,430 acre-ft/yr (4.23 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13 ft³/s (0.37 m³/s) at 0900 hours, Apr. 1, 1981, gage height, 4.98 ft (1.518 m); maximum gage height, 8.61 ft (2.624 m) Jan. 12, 1978, backwater from ice; minimum daily discharge, 2.0 ft³/s (0.057 m³/s) Mar. 28, 1975.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 13 ft³/s (0.37 m³/s) at 0900 hours, Apr. 1, gage height, 4.98 ft (1.518 m); maximum gage height, 6.21 ft (1.893 m) Jan. 3 (backwater from ice); minimum daily discharge, 3.6 ft³/s (0.10 m³/s) Feb. 10.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.4	5.0	4.5	5.4	4.2	4.4	6.3	4.4	4.4	4.6	4.1	4.3
2	4.4	5.0	4.0	5.6	4.2	4.4	5.0	4.4	4.4	4.6	4.1	4.3
3	4.5	5.0	4.1	5.4	4.2	4.4	5.0	4.6	4.3	4.3	4.3	4.3
4	4.5	5.0	4.4	5.4	4.2	4.6	4.8	4.4	4.3	4.3	4.3	4.3
5	4.5	5.0	4.4	5.6	4.2	4.6	5.6	4.4	4.3	4.3	4.3	4.6
6	4.6	5.0	4.3	5.4	4.2	4.4	5.0	4.4	4.3	4.3	4.3	5.0
7	4.6	5.0	4.2	5.6	4.1	4.4	5.0	4.3	4.3	4.3	4.1	4.0
8	4.6	5.0	4.3	5.2	4.0	4.4	5.2	4.4	4.3	4.3	4.4	4.1
9	4.4	4.8	4.3	5.0	3.8	4.4	4.8	4.6	4.8	4.3	4.3	4.0
10	4.3	4.8	4.3	5.2	3.6	4.6	4.8	4.4	4.4	4.	4.4	4.1
11	5.0	5.0	4.9	5.4	3.7	4.6	4.6	4.6	4.4	4.3	4.6	4.1
12	4.3	5.0	4.8	5.8	3.9	4.8	4.8	4.6	4.6	4.3	4.6	4.1
13	4.3	5.2	4.8	5.8	4.0	4.6	4.4	4.6	4.4	4.6	4.6	4.1
14	4.3	5.0	4.9	5.8	4.0	4.5	4.8	4.6	4.6	4.3	4.4	4.1
15	5.2	4.8	5.0	5.4	4.2	4.6	4.8	4.6	4.4	4.3	4.4	4.3
16	4.4	4.5	4.9	5.0	4.4	5.0	4.8	4.6	4.4	4.0	4.4	4.1
17	5.0	4.3	4.8	4.7	4.4	5.4	4.8	4.8	4.3	4.1	4.6	4.1
18	5.0	4.3	4.4	4.9	4.4	5.2	4.8	4.4	4.4	4.1	4.4	4.3
19	5.0	4.5	4.2	5.0	4.4	5.2	4.6	4.4	4.4	4.0	4.4	4.3
20	4.6	4.7	4.2	5.0	4.4	5.2	4.8	4.3	4.6	4.0	4.4	4.3
21	4.6	4.9	4.3	5.0	4.4	5.0	4.8	4.3	4.6	4.1	4.4	4.3
22	4.6	5.0	4.6	5.0	4.2	5.2	4.8	4.4	4.4	4.8	4.3	4.3
23	4.7	4.9	4.3	5.0	4.2	5.2	4.6	4.6	4.4	4.3	4.4	4.3
24	4.7	4.7	4.2	4.8	4.2	5.2	4.6	4.3	4.4	4.1	4.3	4.3
25	4.8	4.6	4.4	4.7	4.0	5.4	4.6	4.4	4.4	5.2	4.3	4.3
26	5.0	4.6	4.6	4.5	4.2	5.2	4.6	4.4	4.4	4.4	4.3	4.3
27	5.0	4.6	4.9	4.5	4.4	5.2	4.6	4.4	4.4	4.6	4.3	4.3
28	5.0	4.6	5.2	4.5	4.4	5.2	4.6	4.3	4.4	4.1	4.3	4.3
29	5.0	4.8	5.4	4.6	---	5.2	4.4	4.3	4.4	4.3	4.3	4.3
30	5.0	5.0	5.6	4.4	---	5.2	4.4	4.4	4.4	4.3	4.1	4.4
31	5.2	---	5.6	4.1	---	5.0	---	4.4	---	4.3	4.1	---
TOTAL	145.5	144.6	142.8	157.7	116.5	150.7	144.7	138.0	132.5	134.2	134.5	127.9
MEAN	4.69	4.82	4.61	5.09	4.16	4.86	4.82	4.45	4.42	4.33	4.34	4.26
MAX	5.2	5.2	5.6	5.8	4.4	5.4	6.3	4.8	4.8	5.2	4.6	5.0
MIN	4.3	4.3	4.0	4.1	3.6	4.4	4.4	4.3	4.3	4.0	4.1	4.0
AC-FT	289	287	283	313	231	299	287	274	263	266	267	254

CAL YR 1980 TOTAL 1730.3 MEAN 4.73 MAX 9.5 MIN 3.0 AC-FT 3430
WTR YR 1981 TOTAL 1669.6 MEAN 4.57 MAX 6.3 MIN 3.6 AC-FT 3310

06429905 SAND CREEK NEAR RANCH A, NEAR BEULAH, WY

LOCATION.--Lat 44°31'13", long 104°05'00", in SE¼SW¼ sec.5, T.52 N., R.60 W., Crook County, Hydrologic Unit 10120203, on left bank 1.0 mi (1.6 km) upstream from Bear Gulch, and 1.6 mi (2.6 km) south of Beulah.

DRAINAGE AREA.--267 mi² (692 km²).

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,600 ft (1,100 m), from topographic map.

REMARKS.--Records good except for period of no gage-height record, May 30 to Aug. 4, which are fair. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 24.4 ft³/s (0.691 m³/s), 17,680 acre-ft/yr (21.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 96 ft³/s (2.72 m³/s) Apr. 29, 1978, gage height, 5.73 ft (1.747 m); minimum daily, 16 ft³/s (0.45 m³/s) Apr. 15-21, 1979, many days in 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum discharge, 700 ft³/s (19.8 m³/s) June 15, 1976, gage height, 7.77 ft (2.368 m), from slope-area measurement of peak flow at site 3 mi (4.8 km) upstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26 ft³/s (0.74 m³/s) at 1345 hours, Apr. 1, gage height, 5.05 ft (1.539 m); minimum daily, 16 ft³/s (0.45 m³/s) many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	21	21	19	19	17	17	24	19	20	16	17	16
2	21	21	19	19	17	17	21	20	20	16	17	17
3	21	21	20	19	17	17	19	20	20	16	17	17
4	21	21	20	19	17	17	19	19	20	16	17	17
5	20	21	19	18	17	17	19	19	20	16	17	17
6	20	21	19	18	17	17	16	19	20	16	17	18
7	20	21	19	18	17	17	17	20	20	16	17	17
8	21	21	19	18	17	17	18	19	20	16	17	17
9	21	21	19	18	17	17	19	19	20	16	17	17
10	21	21	19	18	17	17	19	19	20	16	17	17
11	21	21	19	18	17	17	19	19	19	16	17	17
12	21	21	19	18	17	17	19	19	19	16	17	17
13	21	21	19	18	17	18	19	18	21	16	17	17
14	22	21	19	18	17	18	19	18	21	16	17	17
15	22	21	19	18	17	18	19	18	19	16	17	16
16	22	21	19	18	17	18	19	19	19	16	17	16
17	21	21	19	17	17	18	18	19	19	16	17	16
18	21	20	19	17	17	18	18	19	18	16	17	16
19	21	20	19	17	17	18	18	19	18	16	17	17
20	21	20	19	17	17	18	18	19	18	[illegible]	17	17
21	21	20	18	17	17	18	19	17	18	16	17	17
22	21	20	18	17	17	18	20	17	18	17	17	17
23	21	20	18	17	17	18	19	19	18	17	16	16
24	21	20	18	17	17	18	19	19	17	18	16	16
25	21	20	18	17	17	18	19	19	17	18	16	16
26	21	19	18	17	17	18	19	19	17	19	16	16
27	21	19	18	17	17	18	19	20	17	20	16	16
28	21	19	19	17	17	18	19	20	17	19	16	16
29	21	19	19	17	---	19	19	20	16	18	16	16
30	21	19	19	17	---	21	19	21	16	17	16	16
31	21	---	19	17	---	20	---	21	---	17	16	---
TOTAL	651	612	584	547	476	552	568	592	562	516	518	498
MEAN	21.0	20.4	18.8	17.6	17.0	17.8	18.9	19.1	18.7	16.6	16.7	16.6
MAX	22	21	20	19	17	21	24	21	21	20	17	18
MIN	20	19	18	17	17	17	16	17	16	16	16	16
AC-FT	1290	1210	1160	1080	944	1090	1130	1170	1110	1020	1030	988

CAL YR 1980 TOTAL 7745 MEAN 21.2 MAX 26 MIN 18 AC-FT 15360
WTR YR 1981 TOTAL 6676 MEAN 18.3 MAX 24 MIN 16 AC-FT 13240

06430000 MURRAY DITCH AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'35", long 104°02'58", in SW¼SW¼ sec.7, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on right bank 15 ft (5 m) downstream from State line and 12 mi (19 km) southwest of Belle Fourche, SD.

PERIOD OF RECORD.--June 1954 to current year (irrigation seasons only prior to October 1959).

GAGE.--Water-stage recorder. Altitude of gage is 3,440 ft (1,050 m), from topographic map.

REMARKS.--Records fair. Ditch diverts water from left bank of Redwater Creek, 2.0 mi (3.2 km) upstream, for irrigation of about 700 acres (283 hm²). Flow maintained during irrigation season only. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 37 ft³/s (1.05 m³/s) July 17, 1973; no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge, 25 ft³/s (0.71 m³/s) May 3, gage height, 2.36 ft (0.719 m); no flow for long periods.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	6.1	.00	.00	.00	.00	.00	16	2.1	15	9.2	7.8
2	.00	6.6	.00	.00	.00	.00	.00	18	.00	13	9.2	8.1
3	.00	6.4	.00	.00	.00	.00	.00	25	9.8	13	9.2	8.4
4	.00	6.4	.00	.00	.00	.00	.00	18	8.5	12	9.4	8.4
5	.00	6.3	.00	.00	.00	.00	.00	16	8.0	11	8.8	8.1
6	.00	6.3	.00	.00	.00	.00	.00	16	4.8	10	7.2	7.8
7	2.1	4.7	.00	.00	.00	.00	.00	15	12	10	8.7	7.5
8	5.7	3.7	.00	.00	.00	.00	.00	14	15	12	6.5	7.3
9	7.5	3.7	.00	.00	.00	.00	.00	12	15	15	4.0	6.9
10	19	3.7	.00	.00	.00	.00	.00	9.7	15	14	5.2	6.6
11	20	3.6	.00	.00	.00	.00	.00	8.7	11	15	7.2	6.4
12	11	3.4	.00	.00	.00	.00	.00	8.4	6.4	16	9.6	6.4
13	11	2.1	.00	.00	.00	.00	.00	7.9	9.6	18	12	6.2
14	9.8	.27	.00	.00	.00	.00	.00	7.2	7.8	19	12	2.7
15	10	.30	.00	.00	.00	.00	.00	8.1	8.3	19	12	2.4
16	11	.30	.00	.00	.00	.00	.00	8.7	9.2	14	12	2.4
17	11	.20	.00	.00	.00	.00	.00	8.7	8.8	9.5	12	2.4
18	11	.15	.00	.00	.00	.00	.00	8.7	3.3	10	12	2.3
19	11	.10	.00	.00	.00	.00	.00	3.6	.29	13	13	1.9
20	11	.00	.00	.00	.00	.00	.00	3.9	.00	13	12	1.4
21	11	.09	.00	.00	.00	.00	.00	4.0	.00	13	13	1.6
22	10	.00	.00	.00	.00	.00	.00	4.0	.00	13	12	8.2
23	6.3	.50	.00	.00	.00	.00	.00	4.3	.00	13	12	7.6
24	6.4	.15	.00	.00	.00	.00	10	4.3	.00	15	12	6.3
25	5.8	.09	.00	.00	.00	.00	10	4.3	.00	14	12	6.3
26	2.6	.09	.00	.00	.00	.00	10	4.3	.00	4.8	12	7.6
27	2.5	.00	.00	.00	.00	.00	12	4.3	.00	4.7	13	8.2
28	2.5	.00	.00	.00	.00	.00	14	3.6	.00	4.9	9.1	8.6
29	2.4	.00	.00	.00	---	.00	16	.92	.42	9.1	6.8	9.2
30	2.3	.00	.00	.00	---	.00	16	1.9	11	9.1	6.9	9.6
31	2.9	---	.00	.00	---	.00	---	7.1	---	9.1	7.3	---
TOTAL	205.80	65.24	.00	.00	.00	.00	88.00	276.62	166.31	381.2	307.3	184.6
MEAN	6.64	2.17	.000	.000	.000	.000	2.93	8.92	5.54	12.3	9.91	6.15
MAX	20	6.6	.00	.00	.00	.00	16	25	15	19	13	9.6
MIN	.00	.00	.00	.00	.00	.00	.00	.92	.00	4.7	4.0	1.4
AC-FT	408	129	.00	.00	.00	.00	175	549	330	756	610	366

CAL YR 1980 TOTAL 1421.20 MEAN 3.88 MAX 26 MIN .00 AC-FT 2820
WTR YR 1981 TOTAL 1675.07 MEAN 4.59 MAX 25 MIN .00 AC-FT 3320

BEST DOCUMENT AVAILABLE

06430500 REDWATER CREEK AT WYOMING-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 44°34'26", long 104°02'54", in NW¼NW¼ sec.18, T.7 N., R.1 E., Butte County, Hydrologic Unit 10120203, on left bank 800 ft (244 m) downstream from State line, 5.7 mi (9.2 km) upstream from Crow Creek, and 12 mi (19 km) southwest of Belle Fourche, SD.

DRAINAGE AREA.--471 mi² (1,220 km²).

PERIOD OF RECORD.--April 1929 to September 1931 and February 1936 to July 1937 (published as "near Beulah, WY"), June 1954 to current year.

REVISED RECORDS.--WSP 1309: 1931(M), 1936-37(M).

GAGE.--Water-stage recorder. Altitude of gage is 3,410 ft (1,040 m), from topographic map. Apr. 25, 1929, to Sept. 30, 1931, and Feb. 28, 1936, to July 31, 1937, nonrecording gage at site 2 mi (3 km) upstream at different datum.

REMARKS.--Records good. Large diversions for irrigation above station. Total flow passing State line may be obtained by adding flow of Murray ditch (see station 06430000). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--29 years, 36.1 ft³/s (1.022 m³/s), 26,150 acre-ft/yr (32.2 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,440 ft³/s (69.1 m³/s) Aug. 22, 1973, gage height, 12.19 ft (3.716 m), from rating curve extended above 1,000 ft³/s (27 m³/s) on basis of slope-area measurement at gage height 11.95 ft (3.462 m); no flow Aug. 13-15, 1929.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 72 ft³/s (2.03 m³/s) at 1600 hours, July 16, gage height, 3.00 ft (0.914 m), no other peak above base of 150 ft³/s (4.25 m³/s); minimum daily discharge, 3.1 ft³/s (0.09 m³/s) July 12.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Jan. 23, July 11 to Sept. 30; stage-discharge relation affected by ice Dec. 2-7, Feb. 2, 8-13)

1.8	2.0	2.2	19
2.0	8.8	2.5	39

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	25	20	33	29	32	29	28	4.4	18	13	16	19
2	25	30	32	29	30	29	28	4.8	21	13	16	18
3	25	28	32	29	27	30	31	4.6	16	13	15	17
4	27	28	32	29	27	30	30	6.3	16	14	15	15
5	27	28	30	29	27	30	30	5.8	16	14	15	15
6	26	25	30	29	27	30	29	5.2	12	6.2	11	21
7	24	25	29	29	28	30	27	7.5	14	5.3	12	21
8	20	24	29	29	28	30	27	8.8	13	5.1	13	20
9	20	24	28	29	28	29	28	11	17	3.1	15	19
10	18	23	28	29	27	29	30	16	14	3.4	19	19
11	15	24	28	28	27	29	30	18	16	3.3	14	18
12	12	24	28	29	26	29	26	20	20	3.1	13	18
13	11	27	28	29	26	30	25	23	30	3.3	13	17
14	11	27	28	29	27	29	17	23	29	3.2	12	20
15	15	27	28	29	26	30	14	23	29	3.4	11	21
16	15	27	28	30	27	30	16	22	29	20	12	22
17	16	28	28	30	27	30	16	20	26	17	13	20
18	16	28	29	30	26	29	16	20	24	15	13	16
19	16	29	28	30	27	29	16	26	25	10	12	15
20	16	29	30	30	27	30	17	24	25	9.7	9.3	19
21	17	30	29	30	27	29	16	23	26	10	9.7	15
22	17	30	29	30	27	29	12	23	30	10	9.7	9.3
23	14	31	29	30	28	29	12	25	34	11	9.3	12
24	14	31	30	30	28	29	12	23	34	15	9.3	13
25	11	30	29	31	28	27	8.9	23	33	12	9.3	15
26	16	31	29	31	28	26	5.3	23	31	28	9.3	16
27	18	30	29	31	28	28	4.6	23	31	29	12	15
28	23	30	29	32	29	29	4.1	23	33	28	14	10
29	23	31	29	32	---	29	3.8	23	25	19	14	10
30	23	32	29	32	---	29	4.4	22	17	17	17	11
31	24	---	29	32	---	26	---	20	---	16	18	---
TOTAL	580	819	906	925	770	901	564.1	544.4	706	373.1	400.9	496.3
MEAN	18.7	27.3	29.2	29.8	27.5	29.1	18.8	17.6	23.5	12.0	12.9	16.5
MAX	27	32	33	32	32	30	31	26	34	29	19	22
MIN	11	20	28	28	26	26	3.8	4.4	12	3.1	9.3	9.3
AC-FT	1150	1620	1800	1830	1530	1790	1120	1080	1400	740	795	984

CAL YR 1980 TOTAL 9644.5 MEAN 26.4 MAX 166 MIN 2.0 AC-FT 19130
WTR YR 1981 TOTAL 7985.8 MEAN 21.9 MAX 34 MIN 3.1 AC-FT 15840

06431500 SPEARFISH CREEK AT SPEARFISH, SD

LOCATION.--Lat 44°28'57", long 103°51'40", in SE¼NW¼ sec.15, T.6 N., R.2 E., Lawrence County, Hydrologic Unit 10120203, on right bank in city park in Spearfish, 500 ft (152 m) downstream from fish hatchery and nearest tributary, and 9.8 mi (15.8 km) upstream from mouth.

DRAINAGE AREA.--168 mi^2 (435 km^2).

PERIOD OF RECORD.--October 1946 to current year.

REVISED RECORDS.--WSP 1116: Drainage area.

GAGE.--Water-stage recorder. Altitude of gage is 3,640 ft (1,110 m), from topographic map. Prior to Dec. 5, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good. Regulation by fish hatchery and by hydroelectric plant 0.5 mi (0.8 km) upstream causes diurnal fluctuation, but since storage capacity is small, daily flows are not appreciably affected. Prior to water year 1962 average monthly diversion by Homestake Mining Co. about 7 ft^3/s (0.20 m^3/s). Figures of daily discharge do not include diversion by Homestake Mining Co. Several observations of water temperature and specific conductance were made during the year.

COOPERATION.--Figures of monthly diversion are furnished by Homestake Mining Co.

AVERAGE DISCHARGE.--35 years, 51.4 ft^3/s (1.456 m^3/s), 37,240 acre-ft/yr (45.9 hm^3/yr), unadjusted.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,240 ft^3/s (120 m^3/s) May 15, 1965, gage height, 10.53 ft (3.210 m), from rating curve extended above 520 ft^3/s (14.7 m^3/s) on basis of slope-area measurement of peak flow; maximum gage height, 10.54 ft (3.213 m) June 15, 1976; no flow for part of Oct. 18, 1970.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 5, 1904, reached a stage of 7.00 ft (2.134 m), site and datum of former gage near Spearfish, 1 mi (2 km) upstream, drainage area, 157 mi^2 (407 km^2); discharge about 5,000 ft^3/s (142 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 102 ft^3/s (2.89 m^3/s) at 0330 hours, July 1, gage height, 5.49 ft (1.673 m); minimum daily, 27 ft^3/s (0.76 m^3/s) July 26-28.

CORRECTION.--The Homestake Mining Co. diversion figures were omitted from the 1980 report and are given herewith.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38	35	42	41	32	38	42	43	52	82	36	34
2	37	35	35	40	36	38	41	41	49	85	39	36
3	38	36	45	40	37	38	42	47	52	87	40	34
4	38	38	41	41	36	39	41	50	56	88	35	31
5	38	40	42	41	42	41	42	45	66	55	33	32
6	38	38	41	41	38	41	42	45	74	41	31	37
7	38	38	41	41	38	40	42	44	72	44	31	37
8	39	39	36	40	36	41	41	46	73	39	29	36
9	39	39	41	41	37	41	40	50	79	35	30	34
10	40	40	40	42	30	39	40	47	76	31	33	33
11	42	40	42	43	29	39	40	43	78	31	35	33
12	41	40	41	40	33	40	43	43	77	32	33	34
13	39	41	32	39	35	40	42	42	68	31	32	34
14	38	41	42	39	36	41	46	41	68	31	31	32
15	43	41	42	38	37	40	44	43	67	31	33	32
16	44	41	44	35	39	41	42	42	60	31	37	32
17	44	38	42	33	38	41	41	44	51	32	35	32
18	44	40	41	40	38	41	43	47	57	32	33	32
19	40	39	35	40	39	41	44	44	58	31	34	32
20	43	41	42	38	40	41	44	42	59	31	30	31
21	43	40	44	39	40	41	45	42	57	31	31	30
22	40	40	43	38	40	40	43	46	59	31	33	30
23	43	41	43	38	40	41	42	62	68	32	34	30
24	44	34	40	38	39	40	42	55	67	29	34	30
25	42	41	44	40	39	41	41	48	74	29	35	31
26	50	40	42	40	38	41	44	47	76	27	34	31
27	50	38	43	39	38	42	47	46	80	27	33	32
28	47	42	43	37	38	41	42	46	78	27	34	32
29	37	41	42	39	---	42	39	47	86	34	31	32
30	37	41	41	39	---	44	42	48	85	44	31	33
31	36	---	40	38	---	42	---	49	---	35	32	---
TOTAL	1270	1178	1274	1218	1040	1256	1269	1425	2024	1246	1032	979
MEAN	41.0	39.3	41.1	39.3	37.1	40.5	42.3	46.0	67.5	40.2	33.3	32.6
MAX	50	42	45	43	42	44	47	62	86	88	40	37
MIN	36	34	32	33	29	38	39	41	49	27	29	30
AC-FT	2520	2340	2530	2420	2060	2490	2520	2830	4010	2470	2050	1940

CAL YR 1980 TOTAL 16527 MEAN 45.2 MAX 76 MIN 29 AC-FT 32780
WTR YR 1981 TOTAL 15211 MEAN 41.7 MAX 88 MIN 27 AC-FT 30170

06431500 SPEARFISH CREEK AT SPEARFISH, SD--Continued

DIVERSION BY HOMESTAKE MINING CO., WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

MEAN‡	64.7	58.8	57.2	56.3	55.8	54.7	64.2	64.4	57.8	53.4	54.1	51.4
(†)	627	524	536	613	633	639	583	544	619	683	595	613
AC-FT‡	3980	3490	3520	3460	3210	3370	3820	3960	3440	3280	3320	3060

DIVERSION BY HOMESTAKE MINING CO., WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

MEAN‡	50.9	49.1	51.2	49.8	48.2	51.2	53.4	56.2	79.4	51.6	44.3	43.9
(†)	611	587	621	646	616	658	637	627	708	701	676	672
AC-FT‡	3130	2930	3150	3070	2680	3150	3160	3460	4720	3170	2730	2610

† Diversion, in acre-ft.
‡ Adjusted for diversion.

06433000 REDWATER RIVER ABOVE BELLE FOURCHE, SD

LOCATION.--Lat 44°40'02", long 103°50'20", in NW¼SE¼ sec.11, T.8 N., R.2 E., Butte County, Hydrologic Unit 10120203, on right bank at upstream side of bridge on U.S. Highway 212 in Belle Fourche, 0.5 mi (0.8 km) upstream from Hay Creek and 0.9 mi (1.4 km) upstream from mouth.

DRAINAGE AREA.--920 mi² (2,383 km²).

PERIOD OF RECORD.--November 1945 to current year. Records for water year 1946 incomplete, yearly discharge published in WSP 1309. Prior to October 1960, published as Redwater Creek above Belle Fourche.

REVISED RECORDS.--WSP 1389: 1954 (maximum gage height only).

GAGE.--Water-stage recorder. Altitude of gage is 3,000 ft (910 m), from topographic map. Prior to Dec. 13, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods and for period of no gage-height record, which are poor. Diversions for irrigation of about 13,000 acres (5,260 hm²) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 134 ft³/s (3.795 m³/s), 97,080 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,400 ft³/s (464 m³/s) June 16, 1962, gage height, 11.69 ft (3.563 m), from rating curve extended above 6,000 ft³/s (170 m³/s) on basis of slope-area measurement of peak flow; no flow for part of Aug. 5, 1960, Aug. 8-10, 1968, Aug. 13, 1969, and May 1, 2, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 211 ft³/s (5.98 m³/s) at 0515 hours, June 13, gage height, 3.36 ft (1.024 m), no other peak above base of 500 ft³/s (14.2 m³/s); maximum gage height, 10.03 ft (3.057 m) Feb. 10 (backwater from ice); no flow May 1, 2.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1-10, Feb. 25 to Mar. 6, Apr. 26 to June 10;
stage-discharge relation affected by ice Dec. 3-9, 19-22, 24, 25, Feb. 1-16)

1.58	0	2.2	25
1.6	.30	2.5	55
1.8	4.5	2.9	120
2.0	12	3.3	220

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	142	142	133	125	122	104	.00	85	29	72	60
2	88	142	144	133	126	124	104	.00	78	13	72	60
3	84	146	142	133	126	124	112	.47	90	9.7	65	58
4	83	140	142	133	125	124	116	.64	100	9.6	56	60
5	86	137	142	133	124	121	112	2.7	96	8.6	50	66
6	87	137	142	133	124	120	112	2.0	94	6.7	41	70
7	75	137	138	133	120	120	114	1.2	92	5.3	45	70
8	67	137	136	131	116	118	110	7.5	91	4.2	45	68
9	64	137	134	131	114	116	114	28	95	3.0	52	68
10	52	137	135	131	110	114	118	41	94	2.5	50	66
11	64	135	137	131	115	112	118	52	90	1.7	50	64
12	83	135	140	128	120	112	112	49	92	.70	49	66
13	93	140	135	131	125	112	106	39	155	3.1	48	66
14	90	137	131	126	125	112	101	37	115	2.0	48	66
15	99	137	137	126	128	110	88	33	112	3.2	50	70
16	124	137	137	128	130	110	71	38	110	2.9	50	70
17	135	135	137	124	131	110	71	59	106	2.3	49	66
18	135	135	135	120	128	108	58	71	101	3.0	49	64
19	133	137	130	125	126	108	9.9	70	97	2.2	49	70
20	131	137	128	128	128	106	8.3	74	90	1.9	45	76
21	128	137	120	126	128	108	8.7	68	93	1.8	46	80
22	128	137	127	128	124	108	5.4	74	92	2.1	46	80
23	131	137	137	128	124	110	2.3	95	81	4.5	47	80
24	133	133	134	128	126	110	1.5	120	84	7.0	47	84
25	135	135	130	126	124	106	1.3	110	80	82	48	84
26	131	140	135	126	124	99	1.5	99	60	78	47	85
27	133	137	142	124	124	97	1.5	102	54	76	50	88
28	137	137	140	124	124	102	1.8	97	52	75	50	88
29	142	137	135	128	---	102	3.0	92	52	79	50	90
30	142	140	135	126	---	99	.64	85	36	70	52	94
31	144	---	133	126	---	101	---	85	---	72	56	---
TOTAL	3347	4127	4212	3981	3464	3445	1886.84	1632.51	2667	662.00	1574	2177
MEAN	108	138	136	128	124	111	62.9	52.7	88.9	21.4	50.8	72.6
MAX	144	146	144	133	131	124	118	120	155	82	72	94
MIN	52	133	120	120	110	97	.64	.00	36	.70	41	58
AC-FT	6640	8190	8350	7900	6870	6830	3740	3240	5290	1310	3120	4320

CAL YR 1980 TOTAL 35174.34 MEAN 96.1 MAX 332 MIN .12 AC-FT 69770
WTR YR 1981 TOTAL 33175.35 MEAN 90.9 MAX 155 MIN .00 AC-FT 65800

06433500 HAY CREEK AT BELLE FOURCHE, SD

LOCATION.--Lat 44°40'01", long 103°50'46", in NW¼SW¼ sec.11, T.8 N., R.2 E., Butte County, Hydrologic Unit 10120203, on right bank at intersection of Tenth Avenue and Jackson Street in Belle Fourche, 0.5 mi (0.8 km) upstream from mouth.

DRAINAGE AREA.--121 mi^2 (313 km^2).

PERIOD OF RECORD.--October 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,005.18 ft (915.979 m) National Geodetic Vertical Datum of 1929 (City of Belle Fourche bench mark). Prior to Dec. 8, 1953, nonrecording gage at site 300 ft (91 m) downstream at same datum.

REMARKS.--Records fair except those for winter periods, which are poor. Minor diversion to the stream at times from city reservoir overflow, which enters stream above gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--28 years, 1.41 ft^3/s (0.040 m^3/s), 1,020 acre-ft/yr (1.26 hm^3/yr); median of yearly mean discharges, 0.82 ft^3/s (0.02 m^3/s), 590 acre-ft/yr (0.73 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 930 ft^3/s (26.3 m^3/s) June 19, 1972, gage height, 9.15 ft (2.789 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 50 ft^3/s (1.42 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)	Date	Time	Discharge (ft^3/s)	Discharge (m^3/s)	Gage height (ft)	Gage height (m)
June 12	2230	88	2.49	5.62	1.713	Sept. 6	0745	51	1.44	5.07	1.545
July 25	1630	*168	4.76	*6.33	1.929						

No flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.10	.08	.15	.34	.00	.28	.00	2.1	.00
2	.00	.00	.00	.10	.10	.19	.26	.14	.10	.32	1.1	.00
3	.00	.00	.00	.07	.12	.19	1.4	.73	.21	.04	.85	.00
4	.00	.00	.02	.07	.12	.23	.81	.52	.32	.00	.21	.00
5	.00	.00	.04	.07	.12	.23	.24	.37	.10	.00	.86	.01
6	.00	.00	.06	.07	.10	.28	.27	.38	.04	.00	.60	7.0
7	.00	.00	.08	.06	.10	.34	.29	.92	.21	.00	.02	1.5
8	.00	.00	.10	.06	.06	.40	.24	.89	.07	.00	.03	.58
9	.00	.00	.08	.07	.04	.40	.26	.64	.24	.00	.35	.09
10	.00	.00	.08	.07	.02	.45	.26	.48	.04	.00	1.1	.00
11	.00	.00	.10	.07	.10	.46	.26	.43	.00	.00	.27	.00
12	.00	.00	.08	.07	.30	.45	.36	1.1	6.5	.00	.18	.00
13	.00	.02	.06	.10	.45	.50	.30	.21	30	.00	.00	.00
14	.00	.02	.10	.10	.60	.92	.27	.04	3.5	.00	.00	.00
15	.86	.04	.06	.10	.84	2.0	.28	.00	1.0	.18	.11	.00
16	1.5	.06	.04	.10	1.0	1.1	.28	.00	.50	.32	.23	.00
17	1.7	.04	.04	.08	1.8	.16	.24	.35	.32	.00	.00	.00
18	.60	.00	.02	.05	1.3	.03	.23	.35	.45	.00	.00	.00
19	.18	.00	.00	.06	.58	.00	.21	.21	.21	.00	.00	.00
20	.04	.00	.00	.06	.35	.05	.23	.10	.28	.00	.00	.00
21	.00	.00	.02	.06	.24	.03	.23	.07	.14	.00	.00	.00
22	.00	.04	.04	.06	.22	.03	.19	.60	.04	.00	.00	.00
23	.00	.00	.02	.08	.19	.27	.16	1.3	.00	.04	.00	.00
24	.00	.00	.00	.08	.17	.58	.16	.45	.00	2.4	.00	.00
25	.00	.00	.04	.08	.18	.20	.13	.21	.00	54	.00	.00
26	.00	.00	.00	.06	.19	.40	.12	.10	.00	52	.00	.00
27	.00	.00	.00	.06	.15	.56	.11	.98	1.5	7.0	.00	.00
28	.00	.04	.00	.04	.12	.33	.06	.65	2.0	8.8	.00	.00
29	.00	.04	.16	.06	---	.30	.00	2.4	.92	3.8	.00	.05
30	.00	.00	.28	.07	---	.24	.00	.28	.18	1.7	.00	.20
31	.00	---	.18	.08	---	.75	---	.81	---	1.0	.00	---
TOTAL	4.88	.30	1.70	2.26	9.64	12.22	7.79	15.71	49.15	131.60	7.61	9.43
MEAN	.16	.010	.055	.073	.34	.39	.26	.51	1.64	4.25	.25	.31
MAX	1.7	.06	.28	.10	1.8	2.0	1.4	2.4	30	54	2.1	7.0
MIN	.00	.00	.00	.04	.02	.00	.00	.00	.00	.00	.00	.00
AC-FT	9.7	.6	3.4	4.5	19	24	15	31	97	261	15	19

CAL YR 1980 TOTAL 103.90 MEAN .28 MAX 31 MIN .00 AC-FT 206
WTR YR 1981 TOTAL 252.29 MEAN .69 MAX 54 MIN .00 AC-FT 500

06434500 INLET CANAL NEAR BELLE FOURCHE, SD

LOCATION.--Lat 44°42'14", long 103°49'23", in NE¼NW¼ sec.36, T.9 N., R.2 E., Butte County, Hydrologic Unit 10120202, on right bank 0.5 mi (0.8 km) downstream from Crow Creek, 0.9 mi (1.4 km) downstream from diversion dam on Belle Fourche River, and 2.5 mi (4.0 km) northeast of Belle Fourche.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly diversions from Inlet Canal between station and reservoir for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,985.22 ft (909.895 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 10, 1946, nonrecording gage, and Dec. 10, 1946, to Nov. 26, 1949, water-stage recorder at site 0.8 mi (1.3 km) upstream at same datum.

REMARKS.--Records good except those for winter periods, which are poor. Records show actual diversions to Belle Fourche Reservoir (see station 06435000), from Belle Fourche River and Crow Creek, except for 4,954 acre-ft (6.11 hm³) which was diverted for irrigation from the canal between the station and reservoir.

COOPERATION.--Records of diversion from the canal furnished by Water and Power Resources Service.

AVERAGE DISCHARGE.--36 years, 164 ft³/s (4.644 m³/s), 118,800 acre-ft/yr (146 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum daily discharge, 1,340 ft³/s (37.9 m³/s) May 30, 1962, Mar. 21, 1978; no flow for many days in 1946-49, 1963, 1966, 1971-76, 1978-79.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	113	156	152	157	140	153	125	176	385	177	247	139
2	113	153	150	156	138	157	126	178	358	175	207	142
3	105	158	140	153	138	155	124	188	372	165	160	145
4	104	152	140	150	138	156	124	197	405	166	138	150
5	106	152	130	152	138	151	127	205	405	163	120	156
6	107	151	140	156	140	153	130	192	379	158	216	242
7	91	151	150	152	140	149	129	190	369	134	99	236
8	78	152	150	146	130	148	122	196	327	113	78	212
9	75	150	160	146	120	148	116	227	309	106	107	202
10	60	151	173	150	110	146	117	243	300	107	100	200
11	72	150	160	146	120	144	121	245	280	116	79	183
12	92	150	150	142	140	144	117	246	280	109	72	190
13	107	160	135	145	150	144	112	240	506	158	63	200
14	102	159	128	145	160	144	104	239	395	170	51	150
15	121	158	136	150	170	142	88	234	332	187	62	128
16	175	157	143	146	180	141	66	238	308	287	124	115
17	206	149	149	146	170	140	66	268	303	211	128	105
18	193	149	149	165	160	135	170	280	296	254	131	101
19	194	151	139	144	156	130	153	274	275	266	131	92
20	183	156	140	143	164	128	157	275	267	254	127	85
21	168	156	130	142	168	130	159	266	267	247	123	82
22	162	155	140	143	169	131	165	206	271	249	123	81
23	159	156	150	142	168	134	183	273	245	253	123	75
24	160	144	160	143	172	135	183	400	243	302	122	76
25	163	150	155	146	169	129	177	408	232	807	129	79
26	159	155	150	146	160	123	178	390	202	1080	130	84
27	160	151	160	144	155	121	178	402	198	642	134	75
28	160	155	170	141	156	126	177	420	205	571	135	80
29	163	152	169	140	---	127	177	407	200	547	136	78
30	160	156	170	140	---	123	180	381	183	381	136	80
31	157	---	169	141	---	125	---	371	---	371	136	---
TOTAL	4168	4595	4637	4558	4219	4312	4153	8455	9097	8926	3867	3963
MEAN	134	153	150	147	151	139	138	273	303	288	125	132
MAX	206	160	173	165	180	157	183	420	506	1080	247	242
MIN	60	144	128	140	110	121	66	176	183	106	51	75
AC-FT	8270	9110	9200	9040	8370	8550	8240	16770	18040	17700	7670	7860

CAL YR 1980 TOTAL 57340 MEAN 157 MAX 887 MIN 18 AC-FT 113700
WTR YR 1981 TOTAL 64950 MEAN 178 MAX 1080 MIN 51 AC-FT 128800

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1978.
WATER TEMPERATURES: October 1968 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,100 micromhos Feb. 13, 1969; minimum daily, 335 micromhos Feb. 12, 1971.
WATER TEMPERATURES: Maximum daily, 29.0°C July 1, 1971; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
OCT									
07...	1445	92	1550	8.1	10.5	730	550	200	55
NOV									
18...	1100	140	1300	8.0	2.0	650	440	180	48
DEC									
10...	1200	173	1460	8.3	.0	680	490	190	49
JAN									
13...	1645	143	1320	8.5	4.5	750	560	220	49
FEB									
19...	1115	151	1350	8.2	4.5	750	580	220	49
MAR									
03...	1615	146	1360	8.2	4.0	760	570	220	50
APR									
07...	1615	129	1230	8.1	9.5	780	610	230	51
MAY									
12...	1530	248	1230	8.6	11.5	460	290	120	40
JUN									
03...	0930	364	1490	8.6	17.0	460	280	120	40
JUL									
08...	1530	110	1290	8.5	26.0	410	250	96	41
AUG									
05...	1500	123	1040	8.0	24.5	570	420	156	44
SEP									
08...	1500	205	1070	8.4	20.5	490	320	128	42

BEST DOCUMENT AVAILABLE

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
07...	38	10	.6	4.5	--	630	5.1	.4	10
NOV									
18...	14	4	.2	2.9	210	530	4.5	.3	9.9
DEC									
10...	18	5	.3	2.6	190	550	3.3	.3	10
JAN									
13...	20	5	.3	2.7	190	570	4.0	.3	10
FEB									
19...	25	7	.4	3.0	170	570	4.6	.3	9.8
MAR									
03...	27	7	.4	3.1	190	560	4.6	.3	9.2
APR									
07...	25	6	.4	2.7	170	610	3.9	.3	8.3
MAY									
12...	110	34	2.2	7.8	170	490	13	.3	3.7
JUN									
03...	100	31	2.0	7.3	180	470	13	.5	4.4
JUL									
08...	140	42	3.3	11	160	480	18	.6	3.4
AUG									
05...	63	19	1.2	7.2	150	580	6.8	.5	9.0
SEP									
08...	95	29	2.0	8.7	170	480	17	.5	6.1

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
OCT								
07...	1050	1.4	261	.07	.030	.010	.000	.00
NOV								
18...	917	1.2	387	.32	.070	.060	.040	.12
DEC								
10...	939	1.2	439	.42	.060	.040	.010	.03
JAN								
13...	992	1.3	383	.36	.060	.010	.030	.09
FEB								
19...	985	1.3	402	.26	.060	.060	.020	.06
MAR								
03...	989	1.3	390	.21	.100	.060	.030	.09
APR								
07...	1030	1.4	359	.12	.040	.020	.000	.00
MAY								
12...	889	1.2	595	.36	.240	.040	.000	.00
JUN								
03...	364	1.1	649	.06	.230	.030	.020	.06
JUL								
08...	887	1.2	263	.13	.280	.030	.030	.09
AUG								
05...	918	1.2	305	.26	.250	.000	.020	.06
SEP								
08...	880	1.2	487	.04	.210	.040	.000	.00

06434500 INLET CANAL NEAR BELLE FOURCHE, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	1230	---	---	---	---	1360	1210	1280	941	1320
2	---	---	---	---	1550	---	---	1260	1250	1250	984	1340
3	1370	1340	1270	---	---	---	---	1260	1240	1230	1060	1350
4	---	---	1250	---	1380	1330	---	1250	1220	1260	1200	1340
5	---	1310	1280	1360	---	---	---	1250	1190	1270	1220	1350
6	1400	---	---	---	1430	---	---	1240	1230	1270	1270	1150
7	---	---	---	1260	---	1320	---	1240	1220	1270	1010	1290
8	1470	---	1360	---	---	---	---	1250	1180	1290	1200	1310
9	1570	---	---	1290	1450	---	---	1250	1250	1290	1230	1300
10	1560	1320	1330	---	---	---	---	1250	1280	1300	1230	1300
11	---	---	---	---	1580	1300	---	1250	1250	1280	1380	1320
12	---	1320	1330	1260	---	---	---	1250	1250	1270	1520	1330
13	---	---	---	---	1490	---	---	1270	1180	1230	1520	1330
14	1460	1290	---	1290	---	---	---	1270	1250	1260	1600	1340
15	1390	---	1370	---	---	---	---	1280	1250	1260	1600	1380
16	1390	---	1330	1280	---	1320	---	1290	1240	1240	1630	1410
17	1360	1230	1350	---	1280	1330	---	1300	1240	1250	1550	1410
18	---	---	---	---	---	---	---	1300	1240	1220	1300	1420
19	---	1270	1300	1310	---	---	---	1290	1240	1210	1280	1440
20	1270	---	---	---	1330	1310	---	1260	1230	1240	1260	1440
21	---	---	---	1340	---	---	---	1280	1230	1240	1270	1460
22	1310	---	1370	---	---	---	1490	1320	1240	1240	1290	---
23	---	---	---	1320	---	1340	1470	1360	1240	1060	1290	1460
24	1350	1230	---	---	1370	---	1460	1260	1260	1060	1290	1480
25	---	---	---	---	---	1330	1430	1200	1290	735	1280	1500
26	---	1290	---	1300	1350	---	1430	1200	1270	990	1280	---
27	---	---	---	---	---	1360	1440	1210	1270	1120	1290	---
28	1320	---	---	---	---	---	1440	1210	1260	943	1290	1480
29	1340	---	---	---	---	---	1440	1220	1280	---	1290	1440
30	---	---	---	1300	---	---	1460	1210	1280	967	1290	1460
31	---	---	---	---	---	---	---	1230	---	892	1290	---
MEAN	1400	1290	1310	1300	1420	1330	1450	1260	1240	1180	1290	1380

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	.0	---	.0	---	---	12.0	20.0	22.0	23.0	17.0
2	---	---	---	---	.0	---	---	13.0	---	22.0	22.0	20.0
3	14.0	9.0	.0	---	---	---	---	15.0	20.0	25.0	21.0	17.0
4	---	---	.0	---	.0	8.0	---	14.0	19.0	22.0	21.0	20.0
5	---	12.0	.0	5.0	---	---	---	13.0	19.0	23.0	22.0	19.0
6	14.0	---	---	---	.0	---	---	12.0	20.0	22.0	24.0	18.0
7	---	---	---	3.0	---	3.0	---	13.0	22.0	24.0	20.0	17.0
8	17.0	---	.0	---	---	---	---	10.0	19.0	22.0	20.0	18.0
9	11.0	---	---	2.0	.0	---	---	10.0	19.0	20.0	21.0	17.0
10	9.0	7.0	.0	---	---	---	---	15.0	18.0	24.0	19.0	18.0
11	---	---	---	---	.0	8.0	---	13.0	18.0	23.0	20.0	18.0
12	---	5.0	5.0	2.0	---	---	---	11.0	20.0	25.0	21.0	19.0
13	---	---	---	---	2.0	---	---	12.0	18.0	23.0	21.0	19.0
14	10.0	4.0	---	2.0	---	---	---	12.0	17.0	25.0	20.0	18.0
15	8.0	---	6.0	---	---	---	---	12.0	15.0	24.0	23.0	16.0
16	5.0	---	8.0	.0	---	11.0	---	---	14.0	24.0	22.0	14.0
17	5.0	1.0	7.0	---	2.0	7.0	---	---	18.0	23.0	21.0	15.0
18	---	---	---	---	---	---	---	---	17.0	22.0	22.0	16.0
19	---	5.0	.0	2.0	---	---	---	---	17.0	23.0	23.0	14.0
20	8.0	---	---	---	5.0	8.0	---	---	18.0	24.0	22.0	17.0
21	---	---	---	.0	---	---	---	---	19.0	23.0	23.0	16.0
22	8.0	---	.0	---	---	---	13.0	---	18.0	25.0	22.0	15.0
23	---	---	---	5.0	---	6.0	12.0	---	19.0	22.0	23.0	15.0
24	4.0	.0	---	---	4.0	---	20.0	---	18.0	20.0	21.0	14.0
25	---	---	---	---	---	8.0	6.0	---	20.0	21.0	22.0	15.0
26	---	2.0	---	.0	7.0	---	5.0	---	19.0	18.0	21.0	15.0
27	---	---	---	.0	---	6.0	12.0	---	20.0	19.0	22.0	16.0
28	6.0	---	---	---	---	---	14.0	---	21.0	15.0	20.0	14.0
29	9.0	---	---	---	---	---	13.0	---	19.0	18.0	20.0	13.0
30	---	---	---	---	---	---	12.0	---	21.0	22.0	21.0	12.0
31	---	---	---	---	---	---	---	---	---	23.0	19.0	---
MEAN	9.0	5.0	2.0	2.0	2.0	7.0	12.0	12.5	18.5	22.0	21.5	16.5

06435000 BELLE FOURCHE RESERVOIR NEAR BELLE FOURCHE, SD

LOCATION.--Lat 44°44'12", long 103°40'27", in SW¼SE¼ sec.18, T.9 N., R.4 E., Butte County, Hydrologic Unit 10120202, at dam on Owl Creek, 9.8 mi (15.8 km) northeast of Belle Fourche.

PERIOD OF RECORD.--January 1912 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929, adjustment of 1912. Prior to June 6, 1967, nonrecording gage at present site and datum.

REMARKS.--Offstream reservoir formed by earthfill dam. Storage began in May 1910; dam completed in April 1911. Conservation capacity, 185,170 acre-ft (228 hm^3) 1949 survey, between elevations 2,927.0 ft (892.15 m), lowest outlet, and 2,975.0 ft (906.78 m), crest of spillway weir. Dead storage below elevation 2,927.0 ft (892.15 m) 6,800 acre-ft (8.38 hm^3). Figures given herein represent contents above elevation 2,927.0 ft (892.15 m). Water diverted from Belle Fourche River through Inlet Canal (see station 06434500) is stored in Belle Fourche Reservoir for irrigation.

COOPERATION.--Elevations and contents furnished by Bureau of Reclamation.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents observed, 197,400 acre-ft (243 hm^3) Apr. 30, 1919, May 20, 1920, elevation, 2,974.9 ft (906.75 m); minimum observed, -3,000 acre-ft (-3.70 hm^3) Sept. 30, 1936, water was lowered below dead storage level of 2,927.0 ft (892.15 m) by opening holes in crib walls.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 96,020 acre-ft (118 hm^3) June 23, elevation, 2,963.2 ft (903.18 m); minimum, 17,470 acre-ft (21.5 hm^3) Oct. 1, elevation, 2,943.8 ft (897.27 m).

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents
Sept. 30	2943.8	24270	
Oct. 31	2948.3	35800	+11530
Nov. 30	2951.4	45800	+10000
Dec. 31	2954.2	56787	+10987
CAL YR 1980			-18813
Jan. 31	2956.5	66425	+9638
Feb. 28	2958.4	75080	+8655
Mar. 31	2960.1	85140	+10060
Apr. 30	2961.5	93100	+7960
May 31	2962.5	98850	+5750
June 30	2963.1	102260	+3410
July 31	2959.4	80751	+21509
Aug. 31	2952.2	48700	+32051
Sept. 30	2948.4	36100	-12600
WTR YR 1981			+11830

06436000 BELLE FOURCHE RIVER NEAR FRUITDALE, SD

LOCATION.--Lat 44°41'27", long 103°44'14", in NW¼NE¼ sec.3, T.8 N., R.3 E., Butte County, Hydrologic Unit 10120202, on right bank 5 ft (2 m) downstream from bridge on U.S. Highway 212, 2.5 mi (4.0 km) northwest of Fruitdale and 8.8 mi (14.2 km) downstream from point of diversion to Belle Fourche Reservoir.

DRAINAGE AREA.--4,540 mi² (11,760 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Altitude of gage is 2,925 ft (892 m), from topographic map. Prior to Apr. 9, 1947, nonrecording gage and Apr. 10, 1947, to Oct. 14, 1948, water-stage recorder, at site 100 ft (30 m) upstream at same datum. Oct. 15, 1948, to Dec. 30, 1958, water-stage recorder and Dec. 31, 1958, to Sept. 23, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Keyhole Reservoir since Feb. 12, 1952, usable capacity, 191,600 acre-ft (236 hm³), 180 mi (290 km) upstream. At a point 8.8 mi (14.2 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000) through Inlet Canal (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversions for irrigation of about 60,000 acres (243 km²) above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 86.1 ft³/s (2.438 m³/s), 62,380 acre-ft/yr (76.9 hm³/yr); median of yearly mean discharges, 54 ft³/s (1.53 m³/s), 39,100 acre-ft/yr (48 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,200 ft³/s (346 m³/s) June 15, 1976, gage height, 13.18 ft (4.017 m); no flow at times in 1945, 1948, 1959-62, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,460 ft³/s (41.3 m³/s) at 0900 hours, July 26, gage height, 6.40 ft (1.951 m); no flow June 25, 26.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	4.4	3.8	4.0	3.2	3.6	2.9	4.3	3.6	4.3	7.0	8.8
2	4.3	4.3	3.3	4.0	3.1	3.5	2.7	4.7	3.4	6.8	6.9	11
3	4.0	4.3	3.5	4.0	3.1	3.3	2.7	6.0	2.9	5.7	6.7	12
4	4.0	4.3	3.5	4.0	3.2	3.1	2.9	6.4	3.1	4.7	5.2	11
5	4.0	4.3	3.6	4.0	3.3	3.4	2.9	6.9	3.7	4.9	4.9	11
6	4.1	4.3	3.6	4.0	3.4	3.4	2.5	7.5	3.5	7.0	5.4	22
7	4.5	4.2	3.6	4.0	3.4	3.4	1.8	11	3.4	2.6	6.4	14
8	4.7	4.5	3.6	4.0	3.4	4.2	3.3	12	4.1	19	5.9	10
9	4.7	4.5	3.6	3.8	3.1	3.5	2.9	12	4.3	37	8.6	9.2
10	4.7	4.5	3.6	3.8	2.8	3.1	1.3	11	4.0	35	12	8.1
11	4.7	4.5	3.6	3.8	3.2	3.1	1.3	11	3.4	39	9.4	7.1
12	4.7	4.3	3.8	3.7	3.9	3.1	1.4	8.7	3.8	40	9.5	7.1
13	4.7	4.3	3.8	3.6	4.5	3.1	1.4	5.7	16	40	9.1	7.1
14	4.5	4.0	3.8	3.4	5.4	3.1	1.4	6.7	7.7	14	8.5	7.1
15	6.8	4.0	3.8	3.4	5.6	2.9	1.7	7.2	4.7	6.3	8.8	7.1
16	8.8	4.0	4.0	3.4	5.5	2.5	1.6	3.9	3.6	7.5	8.2	7.1
17	7.5	4.0	4.0	3.4	5.5	2.7	1.3	9.8	2.6	8.6	6.3	6.8
18	6.0	4.0	3.8	3.4	5.5	2.7	1.3	11	2.1	10	3.9	7.4
19	5.0	4.0	3.7	3.4	5.2	2.7	1.3	9.8	1.9	9.0	8.7	7.8
20	4.7	4.0	3.7	3.4	5.0	2.7	1.5	2.7	1.6	4.4	9.4	6.1
21	4.4	3.8	3.9	3.4	4.7	2.7	1.7	.03	1.5	3.4	6.1	5.5
22	4.3	3.8	3.9	3.4	3.9	2.7	1.8	1.2	1.8	3.4	7.6	5.5
23	4.3	3.8	3.9	3.4	3.6	2.9	2.0	6.9	1.7	6.7	8.0	5.5
24	4.3	4.0	3.7	3.4	3.6	2.7	2.8	6.8	.81	14	11	5.5
25	4.3	4.0	3.8	3.4	3.6	2.7	2.9	5.3	.00	310	12	6.8
26	4.3	4.0	3.9	3.4	3.6	2.7	2.9	4.2	.00	713	10	6.8
27	4.5	4.0	4.0	3.4	3.6	2.7	2.9	4.1	.84	21	9.0	6.4
28	4.6	3.9	4.0	3.4	3.6	2.7	3.2	5.0	6.5	10	10	6.4
29	4.6	4.3	4.0	3.4	---	2.9	4.3	4.4	4.6	8.2	10	6.4
30	4.6	4.1	4.0	3.4	---	2.9	4.3	4.3	4.1	6.8	11	6.4
31	4.5	---	4.0	3.4	---	2.9	---	4.2	---	5.9	8.3	---
TOTAL	149.1	124.4	116.8	111.9	111.5	93.6	68.9	204.73	105.25	1408.2	255.8	249.0
MEAN	4.81	4.15	3.77	3.61	3.98	3.02	2.30	6.60	3.51	45.4	8.25	8.30
MAX	8.8	4.5	4.0	4.0	5.6	4.2	4.3	12	16	713	12	22
MIN	4.0	3.8	3.3	3.4	2.8	2.5	1.3	.03	.00	2.6	3.9	5.5
AC-FT	296	247	232	222	221	186	137	406	209	2790	507	494

CAL YR 1980 TOTAL 1705.82 MEAN 4.66 MAX 187 MIN .81 AC-FT 3380
WTR YR 1981 TOTAL 2999.18 MEAN 8.22 MAX 713 MIN .00 AC-FT 5950

06436700 INDIAN CREEK NEAR ARPAN, SD

LOCATION.--Lat 44°48'51", long 103°41'22", in SE¼NE¼ sec.24, T.10 N., R.3 E., Butte County, Hydrologic Unit 10120202, on left bank 3,200 ft (975 m) upstream from North Canal flume, 3.5 mi (5.6 km) northwest of Arpan and 6.9 mi (11.1 km) downstream from Bitter Creek.

DRAINAGE AREA.--315 mi² (815 km²), approximately.

PERIOD OF RECORD.--August 1961 to September 1981 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 2,900 ft (880 m), from topographic map.

REMARKS.--Records poor.

AVERAGE DISCHARGE.--20 years, 20.0 ft³/s (0.566 m³/s), 14,490 acre-ft/yr (17.9 hm³/yr); median of yearly mean discharges, 12 ft³/s (0.34 m³/s), 8,700 acre-ft/yr (11 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 16,700 ft³/s (473 m³/s) June 15, 1976, gage height, 18.00 ft (5.486 m), from floodmarks, from rating curve extended above 3,000 ft³/s (85.0 m³/s) on basis of slope-area measurement of peak flow; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 620 ft³/s (17.6 m³/s) at 0800 hours, July 26, gage height, 10.27 ft (3.130 m), no peak above base of 350 ft³/s (9.91 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.6	1.4	.00
2	.00	.15	.00	.00	.00	.00	.00	.00	.00	3.0	.00	.00
3	.00	.15	.00	.00	.00	.00	.00	.00	.00	2.2	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.2	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45	7.2	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.3	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.8	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.90	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.30	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	16	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	62	.00	.00	.00
15	15	.00	.00	.00	.00	.00	.00	.00	16	81	.75	.00
16	96	.00	.00	.00	.00	.00	.00	.00	5.2	148	1.0	.00
17	45	.00	.00	.00	.00	.00	.00	.00	12	100	1.0	.00
18	21	.00	.00	.00	.00	.00	.00	.00	13	51	.60	.00
19	9.5	.00	.00	.00	.00	.00	.00	.00	1.6	10	.30	.00
20	8.6	.00	.00	.00	.00	.00	.00	.00	1.0	4.5	.00	.00
21	.75	.00	.00	.00	.00	.00	.00	.00	1.2	1.8	.00	.00
22	.15	.00	.00	.00	.00	.00	.00	.00	2.0	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	3.6	.00	1.0	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	5.0	.00	.75	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	4.5	145	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	3.9	574	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	3.8	217	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	23	42	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	14	16	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	5.2	7.5	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	5.0	.00	---
TOTAL	192.00	.30	.00	.00	.00	.00	.00	.00	193.00	1415.05	28.30	.00
MEAN	6.19	.010	.000	.000	.000	.000	.000	.000	6.43	45.6	.91	.000
MAX	96	.15	.00	.00	.00	.00	.00	.00	62	574	9.3	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	381	.6	.00	.00	.00	.00	.00	.00	383	2810	56	.00

CAL YR 1980 TOTAL 336.20 MEAN .92 MAX 96 MIN .00 AC-FT 667
WTR YR 1981 TOTAL 1828.65 MEAN 5.01 MAX 574 MIN .00 AC-FT 3630

06436760 HORSE CREEK ABOVE VALE, SD

LOCATION.--Lat 44°39'08", long 103°21'59", in SE¼NE¼SE¼ sec.15, T.8 N., R.6 E., Butte County, Hydrologic Unit 10120202, on left bank 2.6 mi (4.2 km) upstream from Dry Creek, 5.5 mi (8.8 km) upstream from mouth, 3.0 mi (4.8 km) northeast of Vale, and 4.5 mi (7.2 km) southeast of Newell.

DRAINAGE AREA.--462 mi² (1,197 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1980 to September 1981.

GAGE.--Water-stage recorder. Altitude of gage is 2,710 ft (826 m), from topographic map. April 1962 to September 1980, water-stage recorder, at site 2.7 mi (4.3 km) downstream, at different datum.

REMARKS.--Records good. Natural flow of stream affected by diversions for irrigation above station and by return flow from Belle Fourche Irrigation Project.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 564 ft³/s (16.0 m³/s) at 1200 hours, July 27, gage height, 6.84 ft (2.085 m), no peak above base of 400 ft³/s (11.3 m³/s); minimum daily discharge, 0.63 ft³/s (0.018 m³/s) May 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.0	2.7	2.0	3.3	3.5	2.7	1.3	.63	34	15	36	69
2	2.1	2.8	2.4	2.8	5.4	2.4	1.3	.84	26	16	28	62
3	2.4	2.7	2.7	2.7	3.3	2.4	1.3	1.5	17	13	17	58
4	2.5	2.5	2.4	2.5	4.2	2.2	1.3	2.7	36	15	15	56
5	2.5	2.5	2.2	2.4	3.5	2.1	1.2	2.5	32	15	13	60
6	2.4	2.5	2.0	2.7	3.5	2.1	1.1	1.7	24	23	12	97
7	2.7	2.5	2.0	2.8	6.1	1.8	1.1	1.4	17	23	10	90
8	2.8	2.2	2.2	2.7	2.8	1.8	1.0	1.4	15	27	20	65
9	2.7	2.1	2.2	2.5	2.1	1.7	1.0	1.2	17	26	23	68
10	2.5	2.0	2.4	2.2	2.0	1.7	1.0	1.0	20	28	20	54
11	2.5	2.0	2.4	2.2	1.4	1.7	1.0	.84	20	40	13	49
12	2.5	2.1	2.4	2.2	1.1	1.8	1.0	1.1	47	41	15	52
13	4.0	2.4	2.5	2.2	1.5	1.7	.92	1.3	195	45	22	49
14	2.8	2.5	2.4	2.4	3.0	1.7	1.0	1.3	92	47	27	48
15	5.4	2.5	3.2	2.4	6.5	1.7	.92	4.8	69	44	27	40
16	12	2.4	4.5	2.4	6.1	1.5	.92	3.2	64	69	39	35
17	80	2.1	4.0	2.5	7.2	1.5	.84	4.8	38	176	40	40
18	84	2.1	3.0	2.5	6.5	1.5	.84	5.8	24	187	41	46
19	44	2.1	3.7	2.5	5.8	1.4	.84	4.8	12	133	39	86
20	24	2.1	4.0	2.4	5.4	1.4	.84	3.2	6.8	93	44	45
21	14	2.0	3.5	2.2	4.8	1.4	.92	2.8	6.1	75	52	47
22	7.7	2.1	3.0	2.2	4.2	1.4	.92	4.5	5.4	66	63	59
23	5.1	2.0	2.8	2.2	3.7	1.5	.92	12	3.5	65	64	38
24	4.2	1.8	3.7	2.5	3.5	1.6	.84	15	2.8	96	66	23
25	3.3	1.7	4.2	2.7	3.0	1.6	.84	13	5.4	95	66	13
26	2.8	1.7	3.3	2.7	2.8	1.4	.84	9.5	4.8	254	66	10
27	2.8	2.1	3.0	2.5	2.8	1.4	.69	12	86	535	69	8.1
28	3.0	2.1	3.7	2.4	2.4	1.5	.69	17	66	308	70	6.1
29	3.0	2.0	4.0	2.4	---	1.4	.76	18	45	99	67	5.1
30	3.0	1.8	3.7	3.2	---	1.3	.76	20	31	65	77	5.4
31	2.7	---	3.5	2.8	---	1.3	---	31	---	45	74	---
TOTAL	337.4	66.1	93.0	78.1	108.1	52.6	28.90	200.81	1061.8	2799	1235	1363.7
MEAN	10.9	2.20	3.00	2.52	3.86	1.70	.96	6.48	35.4	90.3	39.8	45.5
MAX	84	2.8	4.5	3.3	7.2	2.7	1.3	31	195	535	77	97
MIN	2.0	1.7	2.0	2.2	1.1	1.3	.69	.63	2.8	13	10	5.1
AC-FT	669	131	184	155	214	104	57	398	2110	5550	2450	2700

CAL YR 1980 TOTAL 9617.36 MEAN 26.3 MAX 216 MIN .93 AC-FT 19080
WTR YR 1981 TOTAL 7424.51 MEAN 20.3 MAX 535 MIN .63 AC-FT 14730

06436760 HORSE CREEK ABOVE VALE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1964 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1968 to September 1969, October 1971 to September 1978.
WATER TEMPERATURES: October 1968 to September 1969, October 1971 to September 1978.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 8,080 micromhos Feb. 1-3, 1969; minimum daily, 550 micromhos June 19, 1976.
WATER TEMPERATURES: Maximum daily, 33.0°C June 29, 1974, July 28, 1978; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
OCT									
01...	0945	1.9	3461	8.2	13.5	1600	1300	280	210
NOV									
20...	1200	2.0	4400	8.1	2.0	1800	1500	310	260
DEC									
10...	1430	2.2	5150	8.0	.0	2400	2000	410	340
JAN									
20...	1600	2.2	5400	8.5	.5	2100	1700	350	290
FEB									
19...	1400	6.5	5000	8.5	--	1900	1600	330	270
MAR									
11...	1400	1.7	4220	8.2	8.5	1700	1500	280	250
APR									
09...	1400	1.3	1810	8.3	12.5	2100	1800	340	310
JUN									
16...	1315	68	1780	8.0	17.5	750	620	180	79
JUL									
27...	1730	540	900	7.6	17.5	330	250	83	29
SEP									
01...	1055	68	1950	8.1	16.5	830	660	196	82

06436760 HORSE CREEK ABOVE VALE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
01...	350	33	3.9	11	--	2000	50	.4	3.6
NOV									
20...	510	37	5.2	12	310	2500	67	.3	2.9
DEC									
10...	710	39	6.3	11	430	3200	110	.3	4.4
JAN									
20...	660	41	6.3	7.9	--	2400	100	.3	3.0
FEB									
19...	550	36	5.4	10	350	2700	73	.3	4.2
MAR									
11...	500	39	5.2	6.6	250	2300	98	.3	1.2
APR									
09...	590	38	5.6	10	300	3000	16	.3	1.1
JUN									
16...	120	25	1.9	9.5	130	870	25	.4	5.1
JUL									
27...	60	26	1.6	7.5	75	360	10	.3	6.3
SEP									
01...	140	27	2.3	11	170	920	16	.4	7.2

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
OCT								
01...	3060	4.1	16.4	.06	.060	.030	.000	.00
NOV								
20...	3850	5.2	20.8	.44	.030	.020	.000	.00
DEC								
10...	5050	6.8	30.0	.89	.060	.040	.010	.03
JAN								
20...	4540	6.1	27.0	.80	.050	.010	.010	.03
FEB								
19...	4150	5.6	72.9	.93	.040	.040	.000	.00
MAR								
11...	3590	4.8	16.5	.21	.050	.020	.000	.00
APR								
09...	4450	6.0	15.6	.06	.040	.020	.010	.03
JUN								
16...	1360	1.8	250	.00	.050	.010	.000	.00
JUL								
27...	604	.82	881	.52	2.90	.010	.020	.06
SEP								
01...	1480	2.0	273	.05	.090	.040	.000	.00

06436760 HORSE CREEK ABOVE VALE, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3770	---	6150	---	6000	---	6200	---	---	---	---	---
2	3900	---	6450	---	6150	4650	6150	---	2560	---	---	---
3	3950	---	6700	---	6000	4700	5900	---	2550	---	---	---
4	3940	4300	---	---	5750	4800	---	---	2250	---	---	---
5	4020	4300	---	6550	5680	4750	5900	---	2230	2030	---	---
6	4000	4400	---	6300	5700	4800	6000	---	2130	2040	2280	---
7	4190	4480	---	6200	5900	4900	5850	---	2340	2040	2290	---
8	4180	4650	---	6350	---	4800	5850	---	2320	2040	---	---
9	---	4600	---	6400	---	4600	5700	7600	---	2280	---	---
10	4400	4500	6250	6500	---	4630	5750	7700	2170	2150	---	---
11	4600	4900	---	6800	---	4720	5800	7500	2070	---	2290	---
12	4600	4550	---	6800	5600	4830	---	7400	2090	---	2280	---
13	4550	4650	6500	6850	5600	---	5900	7400	---	1910	2280	---
14	4600	5000	---	6500	---	5840	6000	13500	---	1910	2250	---
15	---	---	---	---	---	---	5700	13500	---	1950	2270	---
16	---	---	---	6200	---	5800	5600	---	---	---	2050	2000
17	---	5400	---	6100	---	5820	5600	---	1920	1340	2050	2000
18	---	5500	---	---	5600	5530	5600	---	1830	1340	1870	---
19	1920	5400	---	5850	5600	5500	---	4500	1950	---	---	---
20	2000	5500	---	5950	---	5820	5700	4500	2120	---	---	---
21	2570	5550	7250	6000	---	5900	5780	---	2410	---	---	1940
22	2570	5500	7250	6000	5150	6300	---	---	2440	1780	1870	1940
23	2850	---	---	5900	5100	6250	5730	---	2600	1890	1870	2000
24	2850	5900	---	---	5200	6300	5800	3280	2790	1900	---	---
25	3420	---	---	5900	5550	6300	5750	3260	2790	---	1840	3040
26	3410	5700	---	6000	5350	---	5600	3440	---	1060	---	3010
27	3710	5600	---	6300	5300	---	5700	---	2060	1040	---	3020
28	3730	5620	6700	6750	4500	---	5600	---	1900	1180	1840	---
29	---	5900	6600	6700	---	---	5600	---	1550	1500	1840	3010
30	---	5900	---	6550	---	6200	---	---	1680	1500	---	3010
31	---	---	---	6100	---	6200	---	---	---	1530	---	---
MEAN	3640	5120	6650	6310	5540	5410	5820	6970	2220	1720	2080	2500

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	---	.0	---	.0	---	13.0	---	---	---	---	---
2	12.0	---	.0	---	.0	6.0	14.0	---	20.0	---	---	---
3	14.0	---	.0	---	.0	7.0	9.0	---	20.0	---	---	---
4	15.0	5.0	---	---	.0	7.0	---	---	23.0	---	---	---
5	15.0	6.0	---	.0	.0	8.0	14.0	---	24.0	27.0	---	---
6	16.0	6.0	---	.0	.0	5.0	12.0	---	24.0	27.0	24.0	---
7	15.0	6.0	---	.0	.0	5.0	10.0	---	23.0	29.0	24.0	---
8	15.0	6.0	---	.0	---	7.0	11.0	---	21.0	26.0	---	---
9	---	5.0	---	.0	---	8.0	12.0	18.0	---	25.0	---	---
10	10.0	5.0	.0	.0	---	9.0	12.0	19.0	21.0	27.0	---	---
11	9.0	4.0	---	.0	---	10.0	14.0	15.0	21.0	---	25.0	---
12	9.0	4.0	---	.0	.0	11.0	---	16.0	20.0	---	26.0	---
13	10.0	3.0	.0	.0	.0	---	14.0	17.0	---	27.0	26.0	---
14	9.0	1.0	---	.0	---	10.0	14.0	17.0	---	27.0	27.0	---
15	---	---	---	---	---	---	15.0	17.0	---	27.0	26.0	---
16	---	---	---	.0	---	8.0	16.0	---	---	---	24.0	16.0
17	---	.0	---	.0	---	8.0	19.0	---	19.0	26.0	25.0	15.0
18	---	.0	---	---	1.0	8.0	19.0	---	20.0	24.0	24.0	---
19	7.0	.0	---	.0	1.0	9.0	---	17.0	22.0	---	---	---
20	7.0	.0	---	.0	---	8.0	15.0	17.0	21.0	---	---	---
21	7.0	1.0	.0	.0	---	9.0	15.0	---	21.0	---	---	16.0
22	5.0	.0	.0	.0	4.0	11.0	---	---	24.0	23.0	23.0	15.0
23	3.0	---	---	.0	4.0	10.0	17.0	---	27.0	22.0	23.0	15.0
24	2.0	.0	---	---	4.0	10.0	21.0	19.0	27.0	23.0	---	---
25	2.0	---	---	.0	4.0	13.0	21.0	20.0	27.0	---	23.0	14.0
26	1.0	.0	---	.0	5.0	---	21.0	21.0	---	16.0	---	14.0
27	1.0	.0	---	.0	3.0	---	15.0	---	23.0	17.0	---	12.0
28	2.0	.0	.0	.0	6.0	---	16.0	---	21.0	18.0	22.0	---
29	---	.0	.0	.0	---	---	17.0	---	23.0	24.0	22.0	11.0
30	---	.0	---	.0	---	9.0	---	---	26.0	25.0	---	12.0
31	---	---	---	.0	---	8.0	---	---	---	27.0	---	---
MEAN	8.5	2.5	.0	.0	2.0	8.5	15.0	18.0	22.5	24.5	24.5	14.0

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD

LOCATION.--Lat 44°30'47", long 103°08'11", in SE¼NW¼ sec.3, T.6 N., R.8 E., Meade County, Hydrologic Unit 10120202, on right bank near upstream end of bridge on State Highway 34, 0.5 mi (0.8 km) upstream from Bear Butte Creek and 20 mi (32 km) northeast of Sturgis.

DRAINAGE AREA.--5,870 mi² (15,200 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for some periods, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,526.13 ft (769.964 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 31, 1946, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm³), 246 mi (396 km) upstream since February 1952. At a point 75 mi (121 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal (see station 06434500), with other small diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km²) above station.

AVERAGE DISCHARGE.--36 years, 268 ft³/s (7.590 m³/s), 194,200 acre-ft/yr (239 hm³/yr); median of yearly mean discharges, 224 ft³/s (6.34 m³/s), 162,000 acre-ft/yr (200 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 19,100 ft³/s (541 m³/s) June 15, 1976, gage height, 16.04 ft (4.889 m), from rating curve extended above 11,000 ft³/s (312 m³/s); no flow for many days in 1945, 1950, and Aug. 9, 1961.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,110 ft³/s (116 m³/s) at 1545 hours, June 13, gage height, 8.73 ft (2.661 m); minimum daily, 4.8 ft³/s (0.14 m³/s) May 1.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	30	33	21	26	37	39	27	4.8	175	136	194	308
2	28	32	20	27	37	39	25	8.1	180	111	214	280
3	28	34	21	28	37	37	25	22	162	105	196	244
4	26	34	22	28	36	40	25	37	144	102	191	224
5	25	31	24	28	35	40	27	33	191	104	174	247
6	23	29	25	28	35	37	25	43	157	112	145	376
7	22	31	24	28	33	40	25	38	130	102	121	676
8	24	31	24	29	32	36	25	40	144	92	112	524
9	22	32	23	28	30	36	29	35	154	83	135	464
10	21	31	23	29	28	36	23	36	157	99	150	404
11	19	31	24	30	33	35	26	40	137	110	200	345
12	18	30	24	31	37	34	21	38	125	128	165	303
13	19	28	25	29	42	34	19	42	1690	163	140	274
14	23	26	26	33	50	33	21	39	1190	205	130	260
15	30	26	28	31	65	31	18	53	475	221	120	249
16	44	26	30	29	80	32	22	52	304	247	125	238
17	67	26	28	30	88	31	21	63	269	450	135	223
18	109	25	26	33	96	32	22	85	199	515	155	204
19	90	24	25	35	98	31	19	83	142	460	190	188
20	68	25	24	36	120	31	28	74	106	373	180	178
21	54	25	25	37	140	31	21	53	101	316	180	169
22	48	26	27	37	135	30	18	56	88	271	175	172
23	43	26	27	38	131	30	17	71	86	240	185	191
24	36	25	26	39	126	29	16	124	73	333	180	129
25	32	24	23	39	104	29	15	145	66	982	195	97
26	33	24	20	39	58	29	18	129	66	2220	210	88
27	32	23	23	39	46	28	16	106	1270	2020	220	78
28	32	23	23	39	46	27	15	119	1130	968	210	64
29	32	22	24	39	---	27	18	137	785	490	225	66
30	34	21	25	38	---	26	8.8	128	193	289	240	65
31	34	---	26	38	---	28	---	128	---	230	280	---
TOTAL	1146	824	756	1018	1835	1018	635.8	2061.9	10089	12277	5477	7328
MEAN	37.0	27.5	24.4	32.8	65.5	32.8	21.2	66.5	336	396	177	244
MAX	109	34	30	39	140	40	29	145	1690	2220	280	676
MIN	18	21	20	26	28	26	8.8	4.8	66	83	112	64
AC-FT	2270	1630	1500	2020	3640	2020	1260	4090	20010	24350	10860	14540

CAL YR 1980 TOTAL 32662.0 MEAN 89.2 MAX 643 MIN 13 AC-FT 64790
WTR YR 1981 TOTAL 44465.7 MEAN 122 MAX 2220 MIN 4.8 AC-FT 88200

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1954-58, 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: August 1954 to September 1958, October 1968 to September 1971, October 1973 to current year.
WATER TEMPERATURES: August 1954 to September 1958, October 1968 to September 1971, October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 7,000 micromhos May 16, 1981; minimum daily, 650 micromhos Feb. 15, 1971.
WATER TEMPERATURES: Maximum daily, 30.5°C July 5, 1981; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 7,000 micromhos May 16; minimum daily, 1,030 micromhos July 26.
WATER TEMPERATURES: Maximum daily, 30.5°C July 5; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
OCT									
01...	1000	31	2388	8.2	14.5	1200	1000	260	140
NOV									
18...	1515	25	2560	8.2	2.5	1200	1000	260	140
DEC									
11...	1430	24	2870	7.4	.0	1600	1300	350	180
JAN									
20...	1230	37	3100	8.2	.0	1300	1000	260	160
FEB									
19...	1600	98	1615	8.3	.5	1100	780	210	140
MAR									
11...	1200	36	2380	8.3	5.5	1100	890	210	130
APR									
09...	1115	26	2340	8.5	10.5	1000	850	200	130
MAY									
14...	1430	38	2450	8.3	19.5	1200	1000	260	130
JUN									
16...	1200	302	1265	8.1	17.0	680	560	160	69
JUL									
06...	1200	117	1910	--	26.0	810	690	180	88
27...	1330	1680	1032	7.9	17.0	380	290	95	34
SEP									
01...	1450	308	1935	8.4	19.5	790	640	187	79

DATE	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	ALKALINITY LAB (MG/L AS CACO3) (90410)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)
OCT									
01...	170	23	2.1	13	--	1400	24	.5	4.3
NOV									
18...	200	26	2.5	12	200	1500	24	.5	4.6
DEC									
11...	240	24	2.6	11	320	1700	32	.5	8.1
JAN									
20...	230	28	2.8	9.0	--	1500	33	.6	4.7
FEB									
19...	240	32	3.1	9.1	200	1300	34	.4	5.3
MAR									
11...	180	27	2.4	11	170	1100	60	.5	.6
APR									
09...	180	27	2.4	11	180	1200	34	.6	1.4
MAY									
14...	180	25	2.3	12	170	1300	32	.5	3.4
JUN									
16...	130	29	2.2	9.8	120	770	20	.4	6.3
JUL									
06...	150	28	2.3	10	120	980	22	.5	3.0
27...	78	30	1.9	8.7	88	430	11	.5	7.5
SEP									
01...	120	25	2.0	10	150	770	13	.4	5.4

BEST DOCUMENT AVAILABLE

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2550	2430	2700	2770	3000	2590	2490	2700	1670	1580	1670	1950
2	2510	2410	2720	3000	3100	2400	2480	2820	1980	1750	1700	1880
3	2520	2450	2940	3260	3150	2310	2400	2710	1750	1930	1830	1940
4	2570	2480	2910	3490	3050	2320	2480	2600	1750	1870	1740	1990
5	2570	2480	3320	3270	2910	2280	2420	5850	1980	1840	1770	2080
6	2570	2450	3170	2970	2930	2840	2380	3710	1800	1950	1870	1980
7	2590	2470	3190	2700	2460	2870	2350	3360	1860	1920	1750	1870
8	2600	2470	3170	2550	3180	2370	2250	3390	1880	1890	1980	1790
9	2590	2500	3030	2670	3310	2300	2230	2860	1800	1930	1930	1830
10	2600	2550	3040	2760	3310	2270	2250	2770	1790	1900	1930	1830
11	2600	2550	3060	2730	3410	2270	2320	2720	1700	2470	1930	1870
12	2630	2530	3100	2830	3450	2250	2350	2680	1740	1870	1890	1850
13	2680	2460	3050	2630	3360	2250	2380	2540	1730	1900	1900	1830
14	2690	2430	3050	2600	3100	2270	2380	2500	1530	1850	2000	1840
15	2600	2430	2980	2550	2910	2310	2420	2570	1560	1830	1990	1960
16	2330	2510	2620	2610	2450	2340	2500	7000	1590	1820	2080	1980
17	2480	2500	2570	2570	2430	2290	2450	2650	1760	1820	2000	1970
18	---	2560	2920	2740	2310	2320	2430	4280	1640	1630	1800	1960
19	2590	2530	3240	2930	2620	2320	2430	2340	1750	1860	1800	1970
20	2750	2610	4230	3030	2730	2330	2360	2180	1860	1530	1860	1950
21	2640	2600	4120	2950	3480	2340	2450	2150	1920	1600	1920	1940
22	2220	2640	4400	2540	2600	2370	2430	2420	2010	1670	1870	2000
23	2200	2680	3530	2570	2280	2370	2400	2450	2050	1760	1870	1950
24	2220	2730	3440	2500	2070	2340	2350	2530	2060	1800	1830	1950
25	2300	2750	3480	2300	2200	2330	2470	2190	2070	1430	1790	1970
26	2320	2770	3290	2400	2430	2400	2440	2020	2090	1030	1610	2170
27	2340	2900	2930	2430	2530	2470	2510	2000	2180	1090	1630	2240
28	2310	2860	2910	2600	2580	2480	2480	2030	1360	1100	1640	2230
29	2340	2700	2870	---	---	2440	2500	2170	1100	1320	1620	2240
30	2420	---	2540	3100	---	2450	2540	2050	1330	1530	1780	2240
31	2380	---	2660	2920	---	2520	---	1980	---	1660	1820	---
MEAN	2490	2570	3130	2770	2850	2390	2410	2850	1780	1700	1660	1970

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	13.0	5.0	.0	.0	.0	5.0	3.5	11.0	17.5	21.0	23.0	14.0
2	15.0	6.0	.0	.0	.0	.5	8.0	14.0	16.0	22.0	22.0	14.0
3	9.0	5.5	.0	.0	.0	1.5	9.0	15.5	16.0	20.0	22.0	15.0
4	19.5	3.0	.0	.0	.0	2.0	5.0	13.0	15.0	22.0	22.0	13.5
5	19.0	4.5	.0	.0	.0	2.0	3.0	19.5	20.0	30.5	20.0	17.0
6	20.0	5.5	.0	.0	.0	2.0	7.0	13.0	19.0	22.5	22.0	18.5
7	12.0	7.0	.0	.0	.0	1.0	5.0	10.5	24.0	22.0	19.0	15.0
8	19.0	8.5	.0	.0	.0	1.0	5.5	10.5	11.0	20.0	20.0	15.0
9	11.0	6.0	.0	.0	.0	1.0	6.5	8.0	19.0	19.0	19.0	17.0
10	7.5	9.5	.0	.0	.0	3.0	8.0	20.0	17.0	22.0	19.0	17.5
11	4.5	4.0	.0	.0	.0	3.0	13.5	12.5	19.0	22.0	19.0	17.5
12	6.0	5.0	.0	.0	.0	3.5	8.0	11.0	19.5	24.0	20.0	17.0
13	9.0	2.5	.0	.0	.0	4.0	9.0	10.5	18.0	22.0	20.5	17.0
14	9.0	2.0	.0	.0	.0	3.5	6.0	11.0	18.0	24.0	20.0	16.5
15	8.0	1.0	.0	.0	.0	5.5	8.0	13.0	16.0	23.0	21.0	14.5
16	5.0	.0	.0	.0	.0	4.0	11.5	14.0	13.0	24.0	20.0	11.5
17	2.0	.0	.0	.0	.0	7.0	13.0	11.5	16.0	23.0	20.0	10.5
18	---	.0	.0	.0	.0	2.0	14.0	10.0	14.0	22.0	20.0	11.5
19	12.0	.0	.0	.0	.0	4.5	9.0	11.0	16.5	23.0	20.0	13.0
20	6.5	3.0	.0	.0	.0	5.0	7.5	10.5	18.0	23.0	20.0	14.0
21	8.0	.0	.0	.0	.0	6.0	11.5	14.5	18.0	23.0	21.0	11.5
22	10.0	1.0	.0	.0	.0	4.0	8.0	14.0	17.5	22.0	21.0	11.0
23	2.0	.0	.0	.0	.0	6.0	11.0	13.0	19.5	20.0	19.0	13.0
24	.0	.0	.0	.0	.0	5.0	12.0	11.5	20.0	20.5	19.5	13.0
25	2.0	.0	.0	.0	.0	6.5	15.0	13.0	19.5	21.0	20.0	13.0
26	2.0	1.0	.0	.0	.0	8.0	15.0	16.0	20.0	17.5	20.0	10.0
27	1.0	1.0	.0	.0	.0	6.0	14.0	17.0	21.0	17.0	18.0	8.0
28	.5	.5	.0	.0	.0	5.0	13.0	26.0	21.5	17.0	18.0	9.0
29	8.5	.5	.0	---	---	5.0	12.5	19.0	18.0	20.0	18.0	12.5
30	4.0	---	.0	.0	---	7.0	13.0	16.0	19.5	23.0	19.0	11.5
31	4.5	---	.0	.0	---	4.0	---	19.0	---	24.0	16.0	---
MEAN	8.5	3.0	.0	.0	.0	4.0	9.5	14.0	18.0	22.0	20.0	13.5

06437000 BELLE FOURCHE RIVER NEAR STURGIS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P) (00671)	PHOSPHATE, ORTHO, DISSOLVED (MG/L AS PO4) (00660)
OCT								
01...	2130	2.9	176	1.1	.020	.010	.000	.00
NOV								
18...	2280	3.1	154	3.9	.010	.030	.000	.00
DEC								
11...	2730	3.7	177	3.9	.080	.040	.010	.03
JAN								
20...	2380	3.2	238	4.9	.050	.010	.010	.03
FEB								
19...	2080	2.8	550	5.7	.030	.030	.000	.00
MAR								
11...	1810	2.4	176	2.8	.010	.020	.000	.00
APR								
09...	1870	2.5	131	1.9	.030	.010	.000	.00
MAY								
14...	2030	2.7	206	1.8	.080	.070	.000	.00
JUN								
16...	1250	1.7	1020	1.7	.090	.010	.010	.03
JUL								
06...	1510	2.0	477	.32	.080	.020	.030	.09
27...	721	.98	3660	.80	2.70	.020	.020	.06
SEP								
01...	1280	1.7	1060	.58	.140	.030	.010	.03

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	BORON, DISSOLVED (UG/L AS B) (01020)
OCT			
01...	0940	31	--
01...	1000	31	200
NOV			
18...	1505	25	--
18...	1515	25	380
DEC			
11...	1415	24	--
11...	1430	24	500
JAN			
20...	1205	37	--
20...	1230	37	430
FEB			
19...	1600	98	290
19...	1615	98	--
MAR			
11...	1200	36	310
APR			
09...	1100	26	--
09...	1115	26	380
MAY			
14...	1420	38	--
14...	1430	38	420
JUN			
16...	1200	302	210
16...	1215	302	--
JUL			
06...	1200	117	290
06...	1210	117	--
27...	1315	1880	--
27...	1330	1880	150
SEP			
01...	1450	308	280

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD

LOCATION.--Lat 44°22'11", long 102°33'56", in NE¼NE¼ sec.29, T.5 N., R.13 E., Meade County, Hydrologic Unit 10120202, on right bank 10 ft (3 m) downstream from highway bridge, 4.3 mi (6.9 km) northwest of Elm Springs and 4.7 mi (7.6 km) downstream from Hay Creek.

DRAINAGE AREA.--7,210 mi² (18,670 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to June 1932, March 1934 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 926: 1929, 1931(M), 1935, 1937.

GAGE.--Water-stage recorder. Datum of gage is 2,171.60 ft (661.904 m) National Geodetic Vertical Datum of 1929. Prior to July 27, 1939, nonrecording gage at same site and datum.

REMARKS.--Records good except those over 1,000 ft³/s (28.3 m³/s), which are fair and those for winter periods, which are poor. Flow regulated by Keyhole Reservoir, usable capacity, 191,600 acre-ft (236 hm³), 304 mi (489 km) upstream since February 12, 1952. At a point 133 mi (214 km) above station, water is diverted to Belle Fourche Reservoir (see station 06435000), through Inlet Canal near Belle Fourche (see station 06434500), with other smaller diversions from the main stem and tributaries for irrigation. Total diversion for irrigation of about 60,000 acres (243 km²) above station.

AVERAGE DISCHARGE.--50 years (water years 1929-31, 1935-81), 357 ft³/s (10.11 m³/s), 258.600 acre-ft/yr (319 hm³/yr); median of yearly mean discharges, 340 ft³/s (9.63 m³/s), 246,000 acre-ft/yr (303 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 45,100 ft³/s (1,280 m³/s) June 8, 1964, gage height, 15.90 ft (4.846 m), from rating curve extended above 23,000 ft³/s (651 m³/s); no flow for many days in 1936-37, 1939-40, 1961-62, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 1927 reached a stage of 21.8 ft (6.64 m). Flood in spring of 1933 reached a stage of about 20 ft (6.1 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 4,900 ft³/s (139 m³/s) at 0600 hours, June 14, gage height, 6.59 ft (2.009 m); no flow Apr. 30 to May 3.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	42	44	17	50	52	28	25	.00	150	256	334	288
2	42	45	17	50	50	29	24	.00	194	172	229	282
3	40	44	18	50	50	27	25	.00	194	324	301	262
4	38	44	19	50	50	29	25	28	177	137	294	236
5	38	44	19	54	48	28	24	22	177	110	288	229
6	38	44	19	54	50	29	24	21	210	97	199	249
7	34	42	18	54	50	31	22	29	172	98	199	405
8	32	42	17	54	50	32	24	34	150	87	160	596
9	29	40	19	54	50	34	24	34	150	74	150	464
10	29	38	20	54	50	37	24	31	160	54	249	431
11	29	38	20	58	54	32	22	32	160	347	236	392
12	27	40	20	58	58	32	20	37	155	195	210	360
13	27	44	20	54	58	32	18	40	152	110	142	327
14	27	44	20	50	58	31	17	38	2830	128	124	268
15	46	44	25	50	62	29	14	40	900	229	128	262
16	74	44	30	50	66	28	14	38	464	366	142	249
17	90	38	30	50	66	28	13	64	327	505	155	242
18	110	34	28	54	66	29	11	70	262	512	223	236
19	210	33	26	54	66	29	7.6	94	204	470	249	216
20	142	30	26	54	66	31	4.6	97	137	431	236	199
21	107	30	28	58	62	31	4.6	94	100	379	216	194
22	97	28	30	62	60	28	5.8	74	77	346	210	198
23	90	20	30	66	60	28	3.2	62	62	372	216	194
24	72	15	30	70	55	29	2.0	67	49	617	210	210
25	64	12	32	66	50	31	1.2	118	42	1440	223	177
26	57	14	36	60	40	31	.80	182	32	2980	256	124
27	52	14	40	60	35	28	.40	16	149	2620	256	100
28	49	17	45	60	30	28	.40	137	2160	1790	242	80
29	50	20	50	56	---	27	.40	128	1360	1040	268	67
30	47	19	54	56	---	27	.00	146	645	624	288	60
31	44	---	54	52	---	27	---	150	---	464	294	---
TOTAL	1873	1005	857	1722	1512	920	401.00	1923.00	12001	17370	6927	7613
MEAN	60.4	33.5	27.6	55.5	54.0	29.7	13.4	62.0	400	560	223	254
MAX	210	45	54	70	66	37	25	182	2830	2980	334	596
MIN	27	12	17	50	30	27	.00	.00	32	54	124	60
AC-FT	3720	1990	1700	3420	3000	1820	795	3810	23800	34450	13740	15100

CAL YR 1980 TOTAL 36033.90 MEAN 98.5 MAX 4260 MIN 8.5 AC-FT 71470
WTR YR 1981 TOTAL 54124.00 MEAN 148 MAX 2980 MIN .00 AC-FT 107400

BEST DOCUMENT AVAILABL

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1969 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: November 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 5,000 micromhos Jan. 31, Feb. 7-11; minimum daily, 800 micromhos June 19, 1976.
WATER TEMPERATURES: Maximum daily, 33.5°C June 25, 1977; minimum, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 4,330 micromhos Dec. 27; minimum daily, 993 micromhos July 29.
WATER TEMPERATURES: Maximum daily, 25.0°C July 5, 11; minimum daily, 0.0°C during winter months.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
OCT										
16...	0945	68	2100	7.2	5.0	1.4	11.0	K2600	100	890
NOV										
12...	1200	38	2600	--	5.5	--	11.6	K6	K3	--
DEC										
04...	1200	19	3200	8.3	.0	5.5	--	86	K10	1500
JAN										
07...	1430	55	3090	8.3	.5	16	12.8	K2	80	1200
FEB										
18...	1230	66	2165	8.8	.0	170	12.2	ND	100	1100
MAR										
10...	1300	36	2360	8.1	10.0	9.2	12.4	ND	ND	1100
APR										
02...	1300	23	2670	7.9	14.5	--	12.4	ND	K10	1100
MAY										
11...	1330	31	2450	8.2	14.4	70	9.5	K56	160	1700
JUN										
09...	0930	145	2025	8.7	19.0	88	9.4	300	130	820
JUL										
01...	1215	257	1300	8.0	25.0	4100	8.0	4000	3300	360
28...	1445	2170	936	--	21.0	--	--	--	--	--
29...	1530	917	1040	7.7	24.5	2200	--	3000	6300	370
SEP										
02...	1430	294	1590	8.4	19.0	37	9.8	--	90	820

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT										
16...	790	190	100	150	27	2.2	10	1100	--	23
NOV										
12...	--	--	--	--	--	--	--	--	--	--
DEC										
04...	1200	310	170	260	27	2.9	18	1700	230	39
JAN										
07...	1000	250	150	300	34	3.7	5.0	1600	220	43
FEB										
18...	880	240	110	190	28	2.6	9.4	1300	170	29
MAR										
10...	940	210	140	220	30	2.9	11	1300	160	45
APR										
02...	970	220	140	240	31	3.1	11	1400	160	38
MAY										
11...	1580	280	250	550	41	5.8	17	2500	150	87
JUN										
09...	690	180	90	160	30	2.4	10	950	130	23
JUL										
01...	300	93	31	130	43	3.0	9.6	530	59	12
28...		--	--	--	--	--	--	--	--	--
29...	290	94	33	81	32	2.0	8.3	440	78	12
SEP										
02...	690	190	84	140	27	2.3	11	1000	130	14

< Less than.
K Non-ideal colony count.
ND Not detected.

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT										
16...	.4	1.6	1920	1630	2.6	353	--	.40	.41	.250
NOV										
12...	--	--	--	--	--	--	--	--	--	--
DEC										
04...	.5	3.3	2890	2660	3.9	186	--	4.4	4.4	.260
JAN										
07...	.6	4.1	2620	2530	3.5	389	--	9.8	10	.340
FEB										
18...	.4	2.9	2120	1990	2.8	378	--	2.1	2.2	.130
MAR										
10...	.4	.3	2210	2030	3.0	215	--	1.7	1.7	.080
APR										
02...	.5	.0	2400	2150	3.2	152	--	1.2	1.2	.120
MAY										
11...	.4	.8	4320	3800	5.8	371	--	6.0	.06	.080
JUN										
09...	.5	3.5	1700	1500	2.3	666	--	2.1	2.1	.120
JUL										
01...	.5	10	816	861	1.1	566	--	2.0	1.8	.070
28...	--	--	--	--	--	--	--	--	--	--
29...	.4	1.1	788	722	1.0	1950	--	1.1	1.1	.150
SEP										
02...	.4	3.6	1570	1520	2.1	1250	--	.19	.25	.060

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
OCT										
16...	.32	.060	.85	1.7	1.1	.70	1.80	1.5	2.2	9.8
NOV										
12...	--	--	--	--	--	--	--	--	--	--
DEC										
04...	.33	.260	1.0	1.0	1.3	.00	1.30	5.7	5.7	25
JAN										
07...	.44	.320	.25	1.4	.59	1.1	1.70	10	12	52
FEB										
18...	.17	.130	1.2	1.1	1.3	.00	1.20	3.4	3.4	15
MAR										
10...	.10	.090	.67	1.0	.75	.35	1.10	2.5	2.8	12
APR										
02...	.15	.090	1.6	1.2	1.7	.00	1.30	2.9	2.5	11
MAY										
11...	.10	.110	1.8	2.3	1.9	.50	2.40	7.9	2.5	11
JUN										
09...	.15	.100	.98	1.5	1.1	.50	1.60	3.2	3.7	16
JUL										
01...	.09	.080	1.2	12	1.3	11	12.0	3.3	14	61
28...	--	--	--	--	--	--	--	--	--	--
29...	.19	.150	.72	3.1	.87	2.3	3.20	2.0	4.3	19
SEP										
02...	.08	.100	1.1	1.1	1.2	.00	1.20	1.4	1.5	6.4

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
OCT									
16...	--	.020	.030	.09	--	450	2.7	--	--
NOV									
12...	--	--	--	--	--	--	--	--	--
DEC									
04...	--	.010	.010	.03	--	--	--	5.6	--
JAN									
07...	--	.030	.020	.06	--	8.8	--	--	--
FEB									
18...	--	.030	.020	.06	--	--	--	40	--
MAR									
10...	--	.010	.030	.09	--	--	--	6.3	930
APR									
02...	--	.010	.070	.21	--	9.6	2.1	--	--
MAY									
11...	--	.060	.110	.34	--	--	--	16	--
JUN									
09...	--	.020	.120	.37	--	--	--	9.3	66000
JUL									
01...	.070	.080	2.40	7.4	--	32	27	--	140
28...	--	--	--	--	--	--	--	--	--
29...	--	.030	2.10	6.4	--	--	--	25	--
SEP									
02...	--	.030	.100	.31	--	--	--	--	92000

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
16...	0945	68	324	59	--	36	51	58	100	--	--	--
NOV												
12...	1200	38	59	6.1	--	--	--	--	--	--	--	--
DEC												
04...	1200	19	44	2.3	--	--	--	--	94	100	--	--
JAN												
07...	1430	55	231	34	--	--	--	--	98	100	--	--
FEB												
18...	1230	66	387	69	--	97	98	--	--	99	100	--
MAR												
10...	1300	36	192	19	--	--	--	--	--	--	--	--
APR												
02...	1300	23	107	6.8	99	--	--	--	--	--	--	--
MAY												
11...	1330	31	216	19	99	--	--	--	--	--	--	--
JUN												
09...	0930	145	255	100	100	--	--	--	--	--	--	--
JUL												
01...	1215	257	10800	7490	100	88	95	100	--	--	--	--
28...	1445	2170	--	--	--	--	--	--	--	--	--	--
29...	1530	917	5380	13300	99	76	84	98	99	100	--	--
SEP												
02...	1430	294	150	119	96	--	--	--	98	98	99	99

BEST DOCUMENT AVAILABLE

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
OCT 16...	8	0	23	18	5	17000	10	12	9	3	260
JAN 07...	3	0	6	2	4	780	40	3	3	0	360
APR 02...	0	2	7	5	2	1700	60	0	0	1	240
JUL 01...	39	0	210	210	5	180000	40	100	100	0	2100

DATE	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT 16...	220	40	.1	.1	.0	2	0	2	70	50	20
JAN 07...	40	320	.1	.1	.0	23	2	21	20	0	20
APR 02...	70	170	.1	.1	.0	4	0	4	20	0	20
JUL 01...	2100	10	.5	.5	.0	1	1	0	800	790	10

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)
OCT 16...	0945	13	9	4	0	0	0	30	20	10	8
JAN 07...	1430	11	3	8	0	0	0	0	0	0	3
APR 02...	1300	9	5	4	0	0	0	20	0	20	1
JUL 01...	1215	110	100	10	0	0	1	230	220	10	39

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 12,80		MAR 10,81		MAY 11,81		JUN 9,81		JUL 1,81		SEP 2,81	
TIME	1300		1300		1300		0930		1215		1400	
TOTAL CELLS/ML	1100		930		44000		66000		140		92000	
DIVERSITY: DIVISION	1.5		0.8		1.3		1.3		1.0		1.5	
.CLASS	1.5		0.8		1.3		1.3		1.0		1.5	
..ORDER	1.9		1.0		2.0		1.8		1.5		2.4	
...FAMILY	2.7		2.4		2.5		2.5		1.9		2.8	
....GENUS	2.8		2.5		2.8		3.1		1.9		3.2	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...COELASTRACEAE												
....COELASTRUM	--	-	--	-	--	-	1400	2	--	-	--	-
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	100	11	--	-	--	-	--	-	*	0
...OOCYSTACEAE												
....ANKISTRODESMUS	13	1	--	-	5900	14	5200	8	--	-	7600	8
....CHODATELLA	--	-	--	-	--	-	--	-	--	-	720	1
....DICTYOSPHAERIUM	--	-	--	-	4500	10	11000#	17	--	-	*	0
....OOCYSTIS	--	-	--	-	--	-	--	-	55#	40	*	0
....TREUBARIA	--	-	--	-	--	-	350	1	--	-	*	0
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	4200	6	--	-	2900	3
....SCENEDESMUS	77	7	--	-	1400	3	7000	11	--	-	4300	5
....TETRASTRUM	--	-	--	-	--	-	1400	2	--	-	--	-
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CARTERIA	--	-	--	-	--	-	--	-	--	-	*	0
....CHLAMYDOMONAS	26	2	77	8	1000	2	--	-	--	-	2200	2
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...CHAETOCERACEAE												
....CHAETOCEROS	--	-	--	-	--	-	700	1	--	-	--	-
...COSCINODISCACEAE												
....CYCLOTELLA	52	5	--	-	17000#	40	7700	12	27#	20	10000	11
....MELOSIRA	26	2	--	-	--	-	--	-	--	-	720	1
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	39	3	--	-	3100	7	--	-	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	13	1	--	-	--	-	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	77	8	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....FRAGILARIA	--	-	13	1	--	-	--	-	--	-	--	-
....SYNEDRA	77	7	--	-	350	1	--	-	--	-	--	-
...NAVICULACEAE												
....ENTOMONEIS	39	3	39	4	--	-	--	-	--	-	--	-
....NAVICULA	90	8	77	8	1700	4	1400	2	27#	20	*	0
...NITZSCHIACEAE												
....NITZSCHIA	260#	23	430#	46	4900	11	20000#	30	27#	20	12000	13
...SURIRELLACEAE												
....SURIRELLA	--	-	90	10	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	13	1	--	-	1000	2	350	1	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	410#	36	--	-	--	-	2100	3	--	-	28000#	30
..HORMOGONALES												
...NOSTOCACEAE												
....APHANIZOMENON	--	-	--	-	--	-	--	-	--	-	9100	10
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	9100	10
....OSCILLATORIA	--	-	--	-	--	-	2800	4	--	-	2900	3
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....TRACHELOMONAS	13	1	13	1	2100	5	--	-	--	-	*	0

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

BEST DOCUMENT AVAILABLE

06438000 BELLE FOURCHE RIVER NEAR ELM SPRINGS, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2700	2370	2610	2440	3060	2330	2680	---	2370	1190	1510	1830
2	2700	2370	3360	2500	3080	2330	2680	---	2080	1370	1620	1800
3	2700	2420	3280	2370	3250	2540	2710	---	1490	1340	1690	1820
4	2740	2440	3200	2750	3430	2560	2730	3590	2020	1300	1700	1820
5	---	2430	3300	2750	3680	2690	2730	2330	1480	1650	1760	1860
6	2770	2450	3390	2930	3730	2660	2730	2220	1980	1750	1800	1850
7	2760	2470	3520	2940	3710	2560	2780	3480	1970	1980	1790	1880
8	2780	2500	3670	3200	3720	2540	2790	3200	1980	2050	1820	1750
9	2780	2530	3700	3050	4150	2520	2780	3080	1980	2050	1870	1700
10	2810	2590	3850	3100	4120	2520	2780	3730	2010	2060	1630	1700
11	2860	2550	3700	2950	4180	2770	2770	3700	1940	2090	1780	1710
12	2860	2560	3700	2780	4180	2940	2830	3840	1730	1850	1650	1700
13	2890	2460	3690	2700	4180	---	2810	3440	1740	2060	1670	1750
14	2870	2460	3660	2700	3450	2700	2870	3470	1440	2360	2010	1760
15	2450	2500	3540	2740	3430	2620	2670	3200	1320	1960	2000	1770
16	2070	2520	3110	2730	2660	2610	2870	3100	1450	1560	2020	1810
17	2100	2520	2650	2830	2660	2590	2890	2900	1580	1140	2010	1820
18	2100	2570	2650	2800	2450	2590	2900	2730	1720	1680	2010	1870
19	1980	2570	2680	2820	2150	2590	2910	2660	1820	1420	1830	1860
20	2160	2520	2680	2830	1680	2550	2930	3050	1880	1420	1830	1900
21	3590	2530	3110	2830	1760	2560	2450	4100	1880	1500	1840	1940
22	3620	2570	3180	2920	2030	2560	2980	2650	1690	1600	1670	1970
23	2410	2620	3430	2700	2080	2590	3050	2480	1430	1450	1690	1980
24	2910	2670	3700	2670	2450	2530	3100	2390	2020	1440	1790	1990
25	2800	2720	4220	2660	2310	2530	3130	2320	2080	1050	1800	2000
26	2380	2700	4200	2640	2260	2550	3170	2590	2170	1050	1800	1980
27	2320	2760	4330	2460	2150	2540	3270	2630	2250	1060	1790	2000
28	2450	2730	4120	2460	2150	2550	3280	2000	1700	1060	1790	2050
29	2330	2780	2690	2560	---	2560	3380	2130	1190	943	1810	2090
30	2380	2770	2400	2650	---	2610	---	2150	1110	1160	1820	2150
31	2400	---	2820	2650	---	2650	---	2150	---	1380	1810	---
MEAN	2640	2560	3400	2750	3050	2540	2910	2900	1840	1540	1820	1870

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12.0	10.0	.0	.0	.0	1.0	5.0	---	17.0	24.0	24.0	15.5
2	9.0	8.0	.0	.0	.0	1.5	9.0	---	16.0	23.0	22.5	18.0
3	9.0	6.5	.0	.0	.0	2.5	8.5	---	20.0	22.0	23.0	16.0
4	12.0	4.0	.0	.0	.0	1.0	8.0	14.0	19.0	20.0	23.0	16.5
5	11.0	4.5	.0	.0	.0	2.0	8.0	13.0	19.0	25.0	23.0	20.0
6	12.0	7.5	.0	.0	.0	1.0	8.0	11.0	20.0	23.0	24.0	15.0
7	13.5	7.0	.0	.0	.0	.5	6.0	12.0	19.0	24.0	23.0	20.0
8	12.0	6.0	.0	.0	.0	3.0	8.0	9.0	22.0	19.0	24.0	18.0
9	11.0	5.0	.0	.0	.0	2.0	7.5	10.0	23.0	19.0	21.0	18.5
10	8.0	9.0	.0	.0	.0	2.0	6.0	7.0	21.0	23.0	21.0	23.0
11	5.0	5.5	.0	.0	.0	2.0	8.0	12.0	23.0	25.0	21.0	22.0
12	7.0	5.5	.0	.0	.0	4.5	10.0	9.5	21.0	17.0	22.5	20.0
13	9.5	3.5	.0	.0	.0	3.0	9.0	10.0	19.0	21.5	21.0	20.0
14	8.5	4.5	.0	.0	.0	5.0	9.0	12.0	20.0	24.5	22.0	18.5
15	7.0	2.5	.0	.0	.0	6.0	10.0	13.0	15.0	23.5	23.0	16.0
16	5.0	1.0	.0	.0	.0	4.5	11.0	14.0	14.0	23.0	22.0	14.0
17	4.5	1.0	.5	.0	.0	5.5	11.5	11.0	17.0	21.0	23.5	12.5
18	3.5	.5	.0	.0	.0	2.0	10.5	17.0	19.0	23.5	24.0	14.0
19	10.5	.5	.0	.0	.0	4.0	10.0	12.0	16.0	23.0	25.0	14.5
20	8.0	.0	.0	.0	.0	4.0	8.5	13.0	19.0	24.0	24.0	16.0
21	8.0	3.0	.0	.0	.0	5.0	14.0	15.5	21.0	23.5	23.5	14.0
22	7.0	3.0	.0	.0	.0	6.0	12.5	14.0	19.0	24.0	24.0	18.0
23	3.0	.0	.0	.0	.0	6.0	10.5	12.5	23.0	23.0	24.0	19.5
24	2.0	.0	.0	.0	.0	6.0	20.0	11.0	22.0	22.0	22.0	16.0
25	3.0	.0	.0	.0	.0	6.0	18.0	14.0	23.0	20.0	24.0	14.5
26	1.0	.0	.0	.0	1.0	7.0	17.5	15.5	22.0	18.0	22.0	12.0
27	2.0	.0	.0	.0	1.0	6.0	15.5	16.0	23.0	17.0	20.0	13.0
28	1.0	.5	.0	.0	1.0	6.0	18.0	14.0	23.0	17.0	20.0	19.0
29	1.0	.0	.0	.0	---	7.0	17.0	18.0	18.0	20.0	24.0	14.5
30	4.0	.0	.0	.0	---	7.5	---	16.0	20.0	23.0	23.5	14.0
31	5.0	---	.0	.0	---	5.0	---	20.0	---	25.5	17.5	---
MEAN	7.0	3.5	.0	.0	.0	4.0	11.0	13.0	20.0	22.0	22.5	17.0

06438500 CHEYENNE RIVER NEAR PLAINVIEW, SD

LOCATION.--Lat 44°31'16", long 101°59'34", in NE¼SW¼ sec.31, T.7 N., R.18 E., Ziebach County, Hydrologic Unit 10120112, near left bank on downstream side of highway bridge, 1.0 mi (1.6 km) downstream from Ash Creek and 10 mi (16 km) southeast of Plainview.

DRAINAGE AREA.--21,600 mi² (55,900 km²), approximately.

PERIOD OF RECORD.--October 1950 to September 1981 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,877.65 ft (572.308 m) National Geodetic Vertical Datum of 1929. Prior to Mar. 22, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow slightly regulated by Angostura Reservoir 164 mi (264 km) upstream (see station 06401000) since October 1949 and upstream reservoirs on Rapid Creek since 1956 and Belle Fourche River since 1952. Flow also affected by diversions for irrigation of about 70,000 acres (283 km²) and return flow from irrigated areas. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 years, 610 ft³/s (17.28 m³/s), 441,900 acre-ft/yr (545 hm³/yr); median of yearly mean discharges, 570 ft³/s (16.1 m³/s), 413,000 acre-ft/yr (510 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,700 ft³/s (1,180 m³/s) May 26, 1957, from rating curve extended above 18,000 ft³/s (510 m³/s); maximum gage height, 11.68 ft (3.560 m) May 26, 1965; no flow Dec. 14, 19-21, 1961.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood late in May 1920 reached a stage of about 17.5 ft (5.33 m), and flood in May 1927 reached a stage of about 14 ft (4.3 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,390 ft³/s (181 m³/s) at 1545 hours, July 16, gage height, 7.30 ft (2.225 m); minimum daily, 33 ft³/s (0.93 m³/s) Apr. 30, May 1.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used May 17 to June 14, July 30 to Sept. 30; stage-discharge relation affected by ice Dec. 1 to Feb. 23)

3.1	31	4.0	230	5.5	1,510
3.2	41	4.5	485	6.0	2,390
3.4	68	5.0	910	7.0	5,200
3.7	131				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	81	143	100	190	120	137	107	33	242	367	969	317
2	77	142	75	170	100	139	112	40	230	226	578	322
3	75	137	75	160	100	139	114	52	289	419	411	317
4	68	151	80	160	100	142	96	51	289	423	435	293
5	70	151	80	170	110	124	99	51	263	207	1080	263
6	68	146	75	180	110	131	88	74	238	170	357	364
7	73	148	70	170	100	134	94	143	250	140	436	312
8	68	92	70	158	70	137	99	192	230	107	406	473
9	65	107	70	150	50	121	96	376	215	88	357	480
10	64	127	75	150	40	124	98	207	211	75	238	412
11	62	143	75	140	35	124	82	163	230	51	298	389
12	65	128	75	160	40	137	92	160	222	78	293	352
13	66	129	75	170	80	124	82	140	234	117	307	312
14	65	167	80	160	100	124	80	132	1630	812	678	285
15	95	163	85	150	200	119	77	117	1600	400	367	276
16	693	190	85	150	400	112	70	114	779	2170	293	267
17	1160	242	80	160	550	112	61	119	417	1110	271	259
18	890	204	70	170	500	119	56	140	327	526	276	254
19	698	190	70	180	400	117	53	366	263	499	303	242
20	351	197	70	180	450	126	45	383	211	519	271	238
21	271	197	75	180	700	119	48	373	179	493	250	230
22	230	197	75	190	900	119	46	298	146	430	238	222
23	200	186	70	200	950	121	42	254	109	378	316	207
24	167	190	65	200	791	124	47	230	82	2690	373	207
25	157	234	70	190	242	126	68	218	67	1810	298	226
26	154	193	100	170	211	124	62	242	49	3130	285	207
27	151	200	130	150	176	117	59	259	65	4560	298	200
28	129	190	170	150	137	112	55	246	822	3010	280	157
29	170	183	190	150	---	109	41	250	1040	1680	293	151
30	160	200	200	130	---	112	33	259	927	959	298	140
31	146	---	200	130	---	112	---	246	---	640	307	---
TOTAL	6789	5067	2880	5118	7762	3837	2202	5928	11856	28284	11860	8374
MEAN	219	169	92.9	165	277	124	73.4	191	395	912	383	279
MAX	1160	242	200	200	950	142	114	383	1630	4560	1080	480
MIN	62	92	65	130	35	109	33	33	49	51	238	140
AC-FT	13470	10040	5710	10150	15400	7610	4370	11760	23520	56100	23520	16610

CAL YR 1980 TOTAL 85918 MEAN 235 MAX 5130 MIN 25 AC-FT 170400
WTR YR 1981 TOTAL 99953 MEAN 274 MAX 4560 MIN 33 AC-FT 198300

06439000 CHERRY CREEK NEAR PLAINVIEW, SD

LOCATION.--Lat 44°44'38", long 102°03'11", in SW¼NE¼ sec.16, T.9 N., R.17 E., Meade County, Hydrologic Unit 10120113, on left bank 5 ft (2 m) downstream from bridge on State Highway 73, 0.2 mi (0.3 km) downstream from small right-bank tributary, 6.2 mi (10.0 km) downstream from Red Owl Creek, and 11 mi (18 km) northeast of Plainview.

DRAINAGE AREA.--1,190 mi² (3,080 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Monthly discharge only for October and November 1945, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,158.06 ft (657.777 m) National Geodetic Vertical Datum of 1929. Prior to June 8, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--36 years, 44.0 ft³/s (1.246 m³/s), 31,880 acre-ft/yr (39.3 hm³/yr); median of yearly mean discharges, 25 ft³/s (0.71 m³/s), 18,100 acre-ft/yr (22 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,500 ft³/s (496 m³/s) Apr. 1, 1952, gage height, 22.63 ft (6.898 m); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 728 ft³/s (20.6 m³/s) at 1715 hours, July 1, gage height, 8.15 ft (2.484 m), no peak above base of 1,000 ft³/s (28.3 m³/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Aug. 25-28)

3.5	0	4.0	14	5.0	96
3.6	1.5	4.2	25	6.0	240
3.7	3.6	4.5	46	8.0	686
3.8	6.4				

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	464	34	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	332	55	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	73	232	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	34	87	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	21	166	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	14	58	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.5	34	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	4.4	40	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.9	52	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.45	50	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	26	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	67	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	172	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	68	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	45	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	37	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	30	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	21	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	14	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	4.7	.00	8.2	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	3.2	.00	5.3	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.00	3.6	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	2.6	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.9	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	225	.90	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	269	.15	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	119	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	72	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	44	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	9.44	1682.25	1313.95	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.31	54.3	42.4	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	4.7	464	232	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	19	3340	2610	.00

CAL YR 1980 TOTAL 229.27 MEAN .63 MAX 53 MIN .00 AC-FT 455
WTR YR 1981 TOTAL 3005.64 MEAN 8.23 MAX 464 MIN .00 AC-FT 5960

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD

LOCATION.--Lat 44°36'10", long 101°29'24", in NE¼NW¼ sec.5, T.7 N., R.22 E., Ziebach County, Hydrologic Unit 10120112, on left bank 0.5 mi (0.8 km) east of village of Cherry Creek, 0.5 mi (0.8 km) downstream from Cherry Creek and 1.7 mi (2.7 km) upstream from Plum Creek.

DRAINAGE AREA.--23,900 mi² (61,900 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1960 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,699.29 ft (517.944 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 17, 1960, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods and those for no gage-height record, May 4 to June 16, Aug. 28 to Sept. 30, which are poor. Flow regulated by Angostura Reservoir 197 mi (317 km) upstream (see station 06401000) since October 1949 and upstream reservoirs on Rapid Creek since 1956 and Belle Fourche River since 1952. Flow also affected by diversions for irrigation of about 70,000 acres (283 km²) and return flow from irrigated areas. Gage-height telemeter at station.

AVERAGE DISCHARGE.--21 years, 800 ft³/s (22.66 m³/s), 579,600 acre-ft/yr (715 hm³/yr); median of yearly mean discharges, 700 ft³/s (19.8 m³/s), 507,000 acre-ft/yr (630 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,800 ft³/s (1,240 m³/s) June 16, 1967, gage height, 14.75 ft (4.496 m); no flow Jan. 6 to Feb. 2, 1962.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 6,360 ft³/s (180 m³/s) July 27, gage height, 6.98 ft (2.128 m); minimum daily, 25 ft³/s (0.71 m³/s) Apr. 29.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	90	122	100	210	140	252	139	26	260	450	682	326
2	82	122	90	210	130	229	139	27	250	393	1470	326
3	79	120	80	190	120	216	141	41	250	346	671	326
4	79	120	90	170	120	201	141	45	330	384	655	295
5	75	118	90	160	120	192	139	34	338	424	1690	259
6	75	120	85	160	110	187	124	32	300	338	1120	500
7	67	122	85	170	110	187	120	60	270	242	655	525
8	70	122	80	180	95	184	113	129	280	192	657	354
9	67	120	80	170	70	167	109	316	250	157	471	334
10	65	128	80	170	60	159	105	366	230	124	415	326
11	62	126	85	170	45	159	105	290	250	93	306	326
12	63	124	90	190	40	154	101	180	240	67	356	375
13	65	129	90	210	43	148	93	175	250	91	358	334
14	72	140	95	220	70	148	103	150	260	113	451	358
15	86	154	95	210	100	146	75	130	1700	900	984	310
16	368	159	91	190	300	151	72	120	1400	600	367	295
17	1240	192	90	180	500	146	52	115	566	2500	358	273
18	947	207	85	180	600	146	46	120	461	1000	344	266
19	986	178	80	190	550	167	42	250	476	600	314	259
20	500	164	80	200	450	164	40	400	457	500	316	259
21	358	170	85	200	500	131	36	420	393	550	302	245
22	256	175	85	220	800	126	33	400	314	500	295	232
23	195	170	80	230	1000	126	35	300	259	450	295	220
24	170	159	75	240	930	149	32	250	252	500	326	201
25	154	159	75	240	572	157	28	230	178	3000	334	220
26	141	164	80	220	452	151	30	220	151	2500	314	213
27	131	139	100	190	367	146	36	230	154	5800	296	190
28	124	130	130	180	273	146	31	250	181	4200	280	195
29	124	140	170	160	---	154	25	270	750	2460	302	167
30	124	130	200	150	---	144	26	270	550	1650	295	156
31	120	---	210	150	---	134	---	260	---	983	318	---
TOTAL	7035	4323	3031	5910	8667	5067	2309	6106	12000	32107	15997	8665
MEAN	227	144	97.8	191	310	163	77.0	197	400	1036	516	289
MAX	1240	207	210	240	1000	252	141	420	1700	5800	1690	525
MIN	62	118	75	150	40	126	25	26	151	67	280	156
AC-FT	13950	8570	6010	11720	17190	10050	4580	12110	23800	63680	31730	17190

CAL YR 1980 TOTAL 89585 MEAN 245 MAX 2950 MIN 25 AC-FT 177700
WTR YR 1981 TOTAL 111217 MEAN 305 MAX 5800 MIN 25 AC-FT 220600

BEST DOCUMENT AVAILABLE

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: January 1975 to September 1976.
WATER TEMPERATURES: January 1975 to September 1976, October 1977 to September 1978.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).

INSTRUMENTATION.--Water-quality monitor since June 16, 1977 (discontinued September 1979).

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,400 micromhos Jan. 27, 28, 1975; minimum daily, 620 micromhos Apr. 25, 1975.
WATER TEMPERATURES: Maximum daily, 35.0°C Aug. 26, 1975; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 66,000 mg/L May 25, 1976; minimum daily mean, 80 mg/L Nov. 15-17, 1972.
SEDIMENT LOADS: Maximum daily, 2,530,000 tons (2,300,000 tonnes) June 12, 1972; minimum daily, 15 tons (14 tonnes) Dec. 14, 1973.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
OCT										
22...	1015	510	1139	8.1	8.4	12000	10.3	52	K25	120
NOV										
14...	1200	145	2450	8.3	4.9	1.7	12.0	--	43	910
DEC										
16...	1115	91	2500	8.1	.6	200	11.2	>100	222	1100
JAN										
14...	1000	218	2510	8.0	.0	170	11.7	K7	109	1000
FEB										
13...	1045	43	3190	7.9	.0	60	11.8	K1	52	1600
MAR										
12...	1355	152	2300	8.3	9.6	13	11.5	ND	K13	950
APR										
10...	1050	105	2470	8.1	12.6	5.3	10.4	--	K21	960
MAY										
07...	1220	34	3140	8.1	10.0	1.2	--	52	94	1100
JUN										
05...	1200	338	2050	7.5	22.3	260	7.0	K11	K7	780
JUL										
29...	1140	2650	1110	7.8	22.3	4400	6.7	K2	K2	370
AUG										
28...	1345	280	2070	8.1	24.5	120	7.8	220	K60	800
SEP										
30...	1215	157	1985	8.0	14.5	80	--	K48	110	850

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT										
22...	0	38	5.3	170	74	6.8	9.6	290	160	24
NOV										
14...	790	210	94	230	35	3.3	16	1100	120	93
DEC										
16...	820	260	99	240	33	3.2	11	1100	240	93
JAN										
14...	800	240	99	250	35	3.4	10	1200	210	76
FEB										
13...	1300	390	150	320	30	3.5	16	1700	300	150
MAR										
12...	790	230	92	240	35	3.4	12	1200	160	80
APR										
10...	780	230	93	260	37	3.7	13	1200	180	100
MAY										
07...	940	280	100	350	40	4.6	16	1600	170	120
JUN										
05...	660	190	73	180	33	2.8	11	870	120	69
JUL										
29...	280	99	30	110	38	2.7	9.8	470	94	17
AUG										
28...	690	170	91	180	32	2.8	13	980	110	34
SEP										
30...	710	208	81	220	35	3.6	14	1000	140	86

> More than.
K Non-ideal colony count.
ND Not detected.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)
OCT										
22...	.8	19	661	664	2.4	2490	1390	2.1	2.0	.990
NOV										
14...	.5	.6	2010	1820	2.7	792	0	.00	.00	.060
DEC										
16...	.4	10	2160	1970	2.9	531	262	2.0	2.0	.000
JAN										
14...	.4	9.0	2140	2030	2.9	1260	--	4.2	4.3	.170
FEB										
13...	.6	13	3060	2930	4.1	355	69	2.7	2.8	.140
MAR										
12...	.5	3.1	2020	1950	2.7	829	5	.21	.18	.120
APR										
10...	.5	2.5	2170	2010	2.9	615	--	.00	.02	.060
MAY										
07...	.5	7.4	2720	2580	3.7	250	22	.05	.03	.080
JUN										
05...	.5	7.7	1700	1480	2.3	1550	760	.54	.62	.130
JUL										
29...	.5	12	845	811	1.1	6050	--	1.3	1.3	.220
AUG										
28...	.5	4.0	1790	1540	2.4	1350	32	<.10	.13	.380
SEP										
30...	.6	5.2	2060	1700	2.8	873	224	.40	.35	.150

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
OCT										
22...	1.3	.010	.00	.54	.37	.18	.55	2.5	2.6	11
NOV										
14...	.08	.070	.94	.49	1.0	.00	.56	1.0	.56	2.5
DEC										
16...	.00	.140	1.2	1.1	1.2	.00	1.20	3.2	3.2	14
JAN										
14...	.22	.090	1.0	.91	1.2	.00	1.00	5.4	5.3	23
FEB										
13...	.18	.140	.70	.96	.84	.26	1.10	3.5	3.9	17
MAR										
12...	.15	.070	1.6	.64	1.7	.00	.71	1.9	.89	3.9
APR										
10...	.08	.080	1.2	.69	1.3	.00	.77	1.3	.79	3.5
MAY										
07...	.10	.090	.29	.79	.37	.51	.88	.42	.91	4.0
JUN										
05...	.17	.220	.73	1.3	.86	.64	1.50	1.4	2.1	9.4
JUL										
29...	.28	.160	.78	7.4	1.0	6.6	7.60	2.3	8.9	39
AUG										
28...	.49	.630	2.7	.67	3.1	.00	1.30	3.3	1.4	6.3
SEP										
30...	.19	.150	2.1	.76	2.2	.00	.91	2.6	1.3	5.6

< Less than.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
OCT 22...	.010	.330	1.00	3.1	.03	--	--	--	--
NOV 14...	.000	.020	.040	.12	.00	--	--	4.4	--
DEC 16...	.160	.160	.420	1.3	.49	--	--	5.8	--
JAN 14...	--	.110	.110	.34	--	9.9	1.8	--	--
FEB 13...	.220	.180	.220	.67	--	--	--	5.9	--
MAR 12...	.010	.030	.070	.21	--	--	--	4.9	390
APR 10...	--	.030	.050	.15	--	5.9	.2	--	--
MAY 07...	.070	.030	.050	.15	--	--	--	4.4	15000
JUN 05...	.100	.040	.540	1.7	--	--	--	15	37000
JUL 29...	--	.130	3.90	12	--	--	4.5	--	610
AUG 28...	.160	.070	.620	1.9	--	--	--	8.8	79000
SEP 30...	<.010	.010	.040	.12	--	--	--	8.3	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT 22...	1015	510	--	--	--	--	--	--	--	--	--	--
NOV 14...	1200	146	--	--	--	--	--	--	--	--	--	--
DEC 16...	1115	91	--	--	--	--	--	--	--	--	--	--
JAN 14...	1000	218	497	293	--	--	--	--	98	100	--	--
FEB 13...	1045	43	70	8.1	--	--	--	--	84	94	99	100
MAR 12...	1355	152	223	92	--	--	--	--	--	--	--	--
APR 10...	1050	105	194	55	--	--	--	--	--	--	--	--
MAY 07...	1220	34	244	22	--	--	--	--	--	--	--	--
JUN 05...	1200	338	1560	1420	100	70	84	95	100	--	--	--
JUL 29...	1100	2650	14500	104000	100	74	82	98	100	--	--	--
AUG 28...	1345	280	550	416	97	84	89	91	--	--	--	--
SEP 30...	1215	157	432	183	89	--	--	--	95	98	99	100

< Less than.

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT 22...	1015	90	65	25	2	2	0	130	120	10	38
JAN 14...	1000	8	3	5	1	1	0	0	0	0	3
APR 10...	1050	3	1	2	0	0	0	30	20	10	1
JUL 29...	1140	230	210	17	0	--	<1	200	190	10	55

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 22...	38	0	130	120	8	98000	1600	270	0	320	4700
JAN 14...	2	1	14	8	6	7000	80	10	8	2	220
APR 10...	0	1	3	0	3	250	30	2	0	3	100
JUL 29...	--	<3	180	170	8	140000	<10	120	110	6	4200

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 22...	4600	130	.5	.5	.0	6	2	4	390	370	20
JAN 14...	140	80	.6	.4	.2	10	0	10	50	40	10
APR 10...	30	70	.4	.3	.1	2	0	2	20	10	10
JUL 29...	4200	2	2.0	1.7	.3	0	0	1	660	--	<3

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)
NOV 14...	1200	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
NOV 14...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

< Less than.
ND Not detected.

BEST DOCUMENT AVAILABLE

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 18,80		MAR 12,81		MAY 7,81		JUN 5,81		JUL 29,81		AUG 28,81	
TIME	1200		1355		1220		1200		1140		1340	
TOTAL CELLS/ML	3500		390		15000		37000		610		79000	
DIVERSITY: DIVISION	0.9		1.6		0.6		1.4		1.3		1.4	
.CLASS	0.9		1.6		0.6		1.4		1.3		1.4	
..ORDER	1.3		2.2		1.0		1.9		1.3		1.7	
...FAMILY	1.7		3.0		1.1		2.6		2.5		2.5	
....GENUS	1.8		3.0		1.1		3.1		2.7		3.3	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)												
.CHLOROPHYCEAE												
..CHLOROCOCCALES												
...MICRACTINIACEAE												
....MICRACTINIUM	--	-	--	-	--	-	--	-	--	-	5100	6
...OOCYSTACEAE												
....ANKISTRODESMUS	33	1	13	3	580	4	4000	11	110#	18	9100	12
....CLOSTERIOPSIS	--	-	--	-	--	-	--	-	--	-	570	1
....DICTYOSPHAERIUM	--	-	--	-	--	-	1600	4	--	-	12000#	16
....FRANCEIA	--	-	--	-	--	-	--	-	--	-	570	1
....OOCYSTIS	--	-	--	-	--	-	--	-	--	-	2800	4
...SCENEDESMACEAE												
....ACTINASTRUM	--	-	--	-	--	-	4400	12	--	-	2300	3
....SCENEDESMUS	--	-	52	13	--	-	1400	4	--	-	7900	10
....TETRASTRUM	--	-	--	-	--	-	930	2	--	-	--	-
..TETRASPORALES												
...COCCOMYXACEAE												
....OUROCOCCUS	--	-	--	-	--	-	--	-	--	-	570	1
..VOLVOCALES												
...CHLAMYDOMONADACEAE												
....CHLAMYDOMONAS	540#	15	120#	30	120	1	230	1	--	-	--	-
CHRYSOPHYTA												
.BACILLARIOPHYCEAE												
..CENTRALES												
...CHAETOCERACEAE												
....CHAETOCEROS	--	-	--	-	--	-	--	-	--	-	570	1
...COSCINODISCACEAE												
....CYCLOTELLA	200	6	13	3	12000#	82	14000#	36	--	-	20000#	25
....MELOSIRA	--	-	--	-	--	-	1200	3	--	-	2800	4
..PENNALES												
...ACHNANTHACEAE												
....ACHNANTHES	33	1	--	-	120	1	1200	3	--	-	--	-
...CYMBELLACEAE												
....CYMBELLA	--	-	--	-	--	-	230	1	--	-	--	-
...DIATOMACEAE												
....DIATOMA	--	-	13	3	--	-	--	-	--	-	--	-
...FRAGILARIACEAE												
....SYNEDRA	--	-	13	3	--	-	230	1	55	9	--	-
...GOMPHONEMATACEAE												
....GOMPHONEMA	67	2	13	3	--	-	--	-	55	9	--	-
...NAVICULACEAE												
....CALONEIS	--	-	--	-	--	-	--	-	110#	18	--	-

BEST DOCUMENT AVAILABLE

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

PHYTOPLANKTON ANALYSES

DATE TIME	NOV 14,80 1200		MAR 12,81 1355		MAY 7,81 1220		JUN 5,81 1200		JUL 29,81 1140		AUG 28,81 1340	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
....ENTOMONEIS	100	3	--	-	120	1	--	-	--	-	--	-
....GYROSIGMA	--	-	--	-	--	-	230	1	--	-	--	-
....NAVICULA	67	2	--	-	--	-	1200	3	55	9	570	1
...NITZSCHIACEAE												
....NITZSCHIA	2300#	66	64#	17	1000	7	2600	7	110#	18	6200	8
...SURIRELLACEAE												
....SURIRELLA	--	-	26	7	--	-	230	1	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)												
.CRYPTOPHYCEAE												
..CRYPTOMONADALES												
...CRYPTOCHRYSIDACEAE												
....CHROOMONAS	33	1	--	-	120	1	--	-	--	-	--	-
...CRYPTOMONADACEAE												
....CRYPTOMONAS	33	1	--	-	--	-	--	-	--	-	570	1
CYANOPHYTA (BLUE-GREEN ALGAE)												
.CYANOPHYCEAE												
..CHROOCOCCALES												
...CHROOCOCCACEAE												
....ANACYSTIS	--	-	--	-	--	-	4000	11	--	-	--	-
..HORMOGONALES												
...OSCILLATORIACEAE												
....LYNGBYA	--	-	--	-	--	-	--	-	--	-	4000	5
....OSCILLATORIA	--	-	--	-	--	-	--	-	--	-	2800	4
EUGLENOPHYTA (EUGLENOIDS)												
.EUGLENOPHYCEAE												
..EUGLENALES												
...EUGLENACEAE												
....EUGLENA	67	2	39	10	120	1	--	-	--	-	--	-
....TRACHELOMONAS	--	-	--	-	470	3	230	1	110#	18	--	-
PYRRHOPHYTA (FIRE ALGAE)												
.DINOPHYCEAE												
..PERIDINIALES												
...GLENODINIACEAE												
....GLENODINIUM	--	-	26	7	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2750	1750	2700	---	---	2250	2500	2900	---	---	1180	---
2	2850	1750	2700	---	---	2200	2500	2900	1320	---	1380	---
3	2850	1750	2700	---	---	2250	2500	2930	1460	---	1250	---
4	2950	1700	2600	1800	---	2250	2500	2930	1300	---	1140	---
5	2960	1700	3300	---	---	2300	2450	3100	2050	---	1140	---
6	3010	2250	2250	---	---	2300	2500	3200	---	---	1000	---
7	3000	1800	3050	---	---	2400	2500	3140	1750	---	1100	---
8	3000	1800	3100	---	---	2300	2500	3200	1550	---	1150	---
9	3050	1750	3100	---	---	2350	2550	2350	1400	---	1460	---
10	3050	2100	1400	---	---	2350	2470	1480	2100	---	1370	---
11	3100	2150	1480	---	---	2350	2500	1480	2150	---	1160	---
12	3090	1650	1880	---	---	2300	2600	---	2200	---	1160	---
13	3090	1700	---	---	3190	2350	2600	---	2400	---	1450	---
14	3100	2450	---	2510	2500	2300	2500	---	2400	---	1670	---
15	---	2350	---	---	2500	2350	2600	---	1320	---	1160	---
16	---	2350	2500	---	2500	2350	2900	---	1000	---	1160	---
17	---	2300	---	---	2200	2350	2900	---	1440	---	1160	---
18	---	2350	---	---	2250	2350	2900	---	1100	---	1480	---
19	---	2000	---	---	1850	2450	2900	---	1140	---	1490	---
20	---	1950	---	---	1800	2400	2900	---	---	---	1680	---
21	---	1950	1650	---	1550	2400	3000	---	---	---	1870	---
22	1140	2100	1800	---	1800	2400	3000	---	---	---	2000	---
23	1500	2250	---	---	1600	2350	3000	---	---	---	1980	---
24	1750	2350	---	---	1550	2300	3000	---	---	---	1960	---
25	1850	2250	---	---	1600	2350	3100	---	---	---	1740	---
26	2250	2400	---	---	2200	2400	3000	---	---	---	1890	---
27	2100	2600	---	---	2250	2400	3000	---	---	---	2080	---
28	1900	2700	---	---	2250	2400	3100	---	---	---	2070	---
29	1750	2700	---	---	---	2400	3100	---	---	1110	---	---
30	1900	2650	---	---	---	2450	2900	---	---	1250	---	1990
31	1800	---	---	---	---	---	---	---	---	1180	---	---
MEAN	2490	2120	2410	2160	2100	2350	2750	2690	1650	1180	1480	1990

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14.0	---	---	---	---	3.0	14.0	17.0	---	---	33.0	---
2	11.0	---	---	---	---	3.0	11.0	22.0	---	24.5	25.0	---
3	11.0	---	---	---	---	4.0	13.0	18.0	---	---	26.0	---
4	10.0	---	---	---	---	6.0	11.0	21.0	---	---	22.0	---
5	10.0	---	---	---	---	5.0	9.0	22.0	22.5	---	24.0	---
6	20.0	---	---	.0	---	5.0	10.0	14.0	---	---	23.0	---
7	20.0	---	---	---	---	5.0	12.0	10.0	---	---	24.0	---
8	20.0	---	---	---	---	5.0	11.0	14.0	---	---	24.0	---
9	15.0	---	---	---	---	8.0	11.0	13.0	---	---	23.0	---
10	13.0	---	---	---	---	9.0	12.5	14.0	---	---	22.0	---
11	15.0	---	---	---	---	10.0	11.0	14.0	---	---	22.0	---
12	14.0	---	---	---	---	9.5	10.0	---	---	---	25.0	---
13	15.0	---	---	---	.0	8.0	10.0	---	---	---	29.0	---
14	10.0	5.0	---	---	6.0	12.0	14.0	---	---	---	27.0	---
15	---	---	---	---	3.0	12.0	17.0	---	---	---	25.0	---
16	---	---	.5	---	3.0	12.0	16.0	---	---	---	24.0	---
17	---	---	---	---	2.0	8.0	14.0	---	---	---	25.0	---
18	---	---	---	---	2.0	8.0	5.0	---	---	---	22.0	---
19	---	---	---	---	4.0	8.0	5.0	---	---	---	23.0	---
20	---	---	---	---	2.0	6.0	5.0	---	---	---	25.0	---
21	---	---	---	---	3.0	10.0	7.0	---	---	---	25.0	---
22	8.5	---	---	---	3.0	11.0	7.0	---	---	---	25.0	---
23	---	---	---	---	3.0	11.0	18.0	---	---	---	22.0	---
24	---	---	---	---	2.0	11.0	---	---	---	---	24.0	---
25	---	---	---	---	.0	12.0	18.0	---	---	---	27.0	---
26	---	---	---	---	.0	10.0	25.0	---	---	---	25.0	---
27	---	---	---	---	1.0	9.0	20.0	---	---	---	21.0	---
28	---	---	---	---	1.0	10.0	18.0	---	---	---	24.5	---
29	---	---	---	---	---	14.0	18.0	---	---	22.5	---	---
30	---	---	---	---	---	10.0	17.0	---	---	28.0	---	14.5
31	---	---	---	---	---	7.0	---	---	---	27.0	---	---
MEAN	14.0	5.0	.5	.0	2.0	8.5	12.5	16.5	22.5	25.5	24.5	14.5

06439300 CHEYENNE RIVER AT CHERRY CREEK, SD--Continued

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         INITIAL DATE                             81/05/07  81/05/07  81/05/15  81/07/29
         INITIAL TIME-DEPTH-BOTTOM                1220 0000 1220 0001 1220      1140 0000
         FINAL DATE                                         81/05/07
         FINAL TIME-NUMBER OF SAMPLES                       1230 6
         CP-SPACE OR TIME-STATISTICAL FUNC                  CP-S
00010  WATER       TEMP       CENT                10.0                          22.3
00011  WATER       TEMP       FAHN                50.0                          72.1
00020   AIR        TEMP       CENT                10.0                          24.5
00032  CLOUD      COVER     PERCENT                100
00035   WIND     VELOCITY     MPH                 20.0
00036   WIND     DIR.FROM   NORTH-0                180
00061  STREAM      FLOW,    INST-CFS                34                          2540
00065  STREAM      STAGE      FEET                0.83                          5.56
00094 CNDUCTVY  FIELD       MICROMHO              3140                          1110
00299    DO       PROBE       MG/L                                               6.7
00301    DO       SATUR     PERCENT                                             76.1
00400    PH                    SU                 8.10                          7.80
00720 CYANIDE     CN-TOT      MG/L                         0.000     0.000     0.000
31616 FEC COLI  MFM-FCBR    /100ML                  44
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Analyses by Corps of Engineers.
Tables from STORET.

BEST DOCUMENT AVAILABLE

06439500 CHEYENNE RIVER NEAR EAGLE BUTTE, SD

LOCATION.--Lat 44°41'44", long 101°13'08", in NE¼SE¼ sec.32, T.9 N., R.24 E., Haakon County, Hydrologic Unit 10120112, at discontinued gaging station on downstream side near center of bridge on State Highway 63, 0.5 mi (0.8 km) upstream from Hermaphrodite Creek and 21 mi (33.8 km) south of Eagle Butte.

DRAINAGE AREA.--24,500 mi² (63,500 km²), approximately.

PERIOD OF RECORD.--Water years 1972 to current year (discontinued Sept. 30, 1981).

REMARKS.--Station is affected by backwater from Oahe Dam; discharge records not available.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
OCT									
20...	1330	--	1200	8.1	8.0	150	12	47	8.4
NOV									
18...	1330	--	2420	8.4	3.9	910	790	210	94
DEC									
16...	0845	--	2450	8.1	.5	1000	1050	260	97
JAN									
14...	1200	--	2330	7.9	.1	930	730	230	87
FEB									
13...	1230	--	3500	8.9	.5	1500	1200	350	140
MAR									
12...	1430	--	2330	8.2	9.3	950	740	230	92
APR									
10...	1150	--	2310	8.2	11.5	990	850	240	94
MAY									
07...	1345	--	3050	8.1	10.1	1000	880	260	93
JUN									
05...	1245	--	2200	7.8	23.0	860	750	200	87
AUG									
28...	1510	--	2060	8.1	25.2	840	730	190	89
SEP									
30...	1245	--	--	8.0	13.8	880	740	217	83

BEST DOCUMENT AVAILABLE

06439500 CHEYENNE RIVER NEAR EAGLE BUTTE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
OCT									
20...	190	72	6.7	6.1	140	370	32	.5	15
NOV									
14...	240	36	3.5	15	120	1100	89	.4	.9
DEC									
16...	240	33	3.2	10	--	1100	98	--	--
JAN									
14...	230	35	3.3	10	200	1100	75	.4	10
FEB									
13...	330	33	3.8	16	300	1700	140	.6	13
MAR									
12...	240	35	3.4	12	160	1100	75	.5	4.1
APR									
10...	260	36	3.6	12	140	1300	58	.5	2.6
MAY									
07...	340	41	4.6	16	150	1500	110	.5	6.7
JUN									
05...	220	35	3.3	13	110	1100	63	.5	6.1
AUG									
28...	160	31	2.7	14	110	1000	68	.5	5.1
SEP									
30...	220	35	3.5	14	140	1100	82	.6	4.6

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
OCT								
20...	766	1.0	--	2.3	15.0	.100	--	--
NOV								
14...	1820	2.4	--	.00	.030	.030	.010	.03
DEC								
16...	1440	1.9	--	2.1	.440	.150	.110	.34
JAN								
14...	1880	.18	--	2.8	.120	.100	.060	.18
FEB								
13...	2880	3.9	--	2.6	.220	.030	.150	.46
MAR								
12...	1850	2.5	--	.41	.100	.020	.000	.00
APR								
10...	2050	2.7	--	.00	.050	.020	.000	.00
MAY								
07...	2420	3.2	--	.09	.080	.030	.020	.06
JUN								
05...	1760	2.3	--	.69	6.60	.360	.060	.18
AUG								
28...	1610	2.1	--	.01	.250	.020	.030	.09
SEP								
30...	1810	2.4	--	.31	.030	.020	.020	.06

06439980 LAKE OAHE NEAR PIERRE, SD

LOCATION.--Lat 44°27'30", long 100°23'29", in NE¼ sec.1, T.111 N., R.80 W., 5th principal meridian, Hughes County, Hydrologic Unit 10130105, in Pier A of Control Tower No. 1 of powerhouse intake structure of dam on Missouri River, 6.0 mi (9.7 km) northwest of Pierre, 7.1 mi (11.4 km) upstream from Bad River, and at mile 1,072.3 (1,725.3 km).

DRAINAGE AREA.--243,500 mi^2 (630,700 km^2), approximately.

PERIOD OF RECORD.--August 1958 to current year (monthend contents only). Prior to October 1967, published as Oahe Reservoir near Pierre.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Jan. 14, 1959, nonrecording gages at various locations upstream from outlet works, Jan. 14, 1959, to Sept. 30, 1962, recorder in Tower No. 1 of outlet works, all at same datum.

REMARKS.--Reservoir is formed by an earthfill dam; storage began in August 1958. Maximum capacity, 23,510,000 acre-ft (29,000 hm^3) below elevation 1,620.0 ft (493.78 m), top of spillway gates. Normal maximum, 22,420,000 acre-ft (27,600 hm^3) below 1,617.0 ft (492.66 m), of which about 2,390,000 acre-ft (2,950 hm^3) is designated for flood control. Inactive storage, 5,521,000 acre-ft (6,810 hm^3) below elevation 1,540.0 ft (469.39 m). Dead storage, 3,030 acre-ft (3.74 hm^3) below elevation 1,425.0 ft (434.34 m), invert of lowest outlet tunnel. From capacity table put into use Jan. 1, 1981: Maximum capacity, 23,338,000 acre-ft (28,800 hm^3). Normal maximum, 22,240,000 acre-ft (27,400 hm^3). Inactive storage, 5,451,000 acre-ft (6,720 hm^3). Dead storage, 1,970 acre-ft (243 hm^3). Figures given herein represent elevations at powerhouse intake structure and total contents adjusted for wind effect.

The spillway consists of a gated chute with flat crest at elevation 1,596.5 ft (486.61 m), 8 gates, 50 by 23.5 ft (15.2 X 7.2 m) each; design capacity, 300,000 ft^3/s (8,500 m^3/s). The outlet works consist of 7 turbines with a generating capacity of 85,000 kilowatts each. Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 22,681,000 acre-ft (28,000 hm^3) Aug. 22, 1975, affected by wind; minimum since initial filling, 14,815,000 acre-ft (18,300 hm^3) Sept. 25, 1981.

EXTREMES FOR CURRENT YEAR.--Period of Oct. 1 to Dec. 31: Maximum contents, 16,432,000 acre-ft (20,300 hm^3) Dec. 31; minimum contents, 15,993,000 acre-ft (19,700 hm^3), Nov. 25. Period of Jan. 1 to Sept. 30: Maximum contents, 17,550,000 acre-ft (21,600 hm^3) Mar. 17; minimum contents, 14,815,000 acre-ft (18,300 hm^3) Sept. 25.

CORRECTIONS.--Capacity and storage figures in the REMARKS paragraph are in error for some years. The following table gives the correct figures for water years 1959-80.

Date	Maximum capacity	Normal maximum	Inactive storage	Dead storage
Aug. 1958 to Dec. 31, 1971	23,630,000	22,530,000	5,538,000	2,020
Jan. 31, 1972 to Sept. 30, 1980	23,510,000	22,420,000	5,521,000	3,030

Elevations shown in EXTREMES FOR PERIOD OF RECORD and EXTREMES FOR CURRENT YEAR, for water years 1959-80, may have been incorrectly computed and may be slightly in error.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents
Sept. 30	1597.96	16370000	
Oct. 31	1597.17	16230000	-140000
Nov. 30	1596.81	16065000	-165000
Dec. 31	1598.09	16432000	+367000
Dec. 31	1598.09	*16313000	-119000
CAL YR 1980			-2091000
Jan. 31	1599.67	16729000	+416000
Feb. 28	1601.35	17230000	+501000
Mar. 31	1602.01	17333000	+103000
Apr. 30	1597.81	16184000	-114900
May 31	1594.71	15438000	-746000
June 30	1594.98	15550000	+112000
July 31	1595.52	15625000	+75000
Aug. 31	1594.22	15238000	-387000
Sept. 30	1592.63	14829000	-409000
WTR YR 1981			-1541000

NOTE.--Reservoir frozen over Feb. 8 to Mar. 14.
*New capacity table put into use Jan. 1, 1981.

BEST DOCUMENT AVAILABLE

06440000 MISSOURI RIVER AT PIERRE, SD
(National stream-quality accounting network station)

LOCATION.--Lat 44°22'25", long 100°22'20", in SE¼ sec.21, T.5 N., R.31 E., Hughes County, Hydrologic Unit 10140102, at discontinued gaging station, near right bank on downstream side of pier of Chicago and North Western Transportation Company bridge, 1.3 mi (2.1 km) upstream from Bad River, 5.8 mi (9.3 km) downstream from Oahe Dam, and at mile 1,006.5 (1,716 km).

DRAINAGE AREA.--243,500 mi² (630,700 km²), approximately.

PERIOD OF RECORD.--Water years 1971 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: July 1971 to current year.
WATER TEMPERATURES: July 1971 to current year.

COOPERATION.--Flow completely regulated by Lake Oahe (station 06439980) 5.8 mi (9.3 km) upstream. Discharge furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 895 micromhos Dec. 17, 1980; minimum daily, 530 micromhos Dec. 24, 1974, Dec. 17, 1980.
WATER TEMPERATURES: Maximum daily, 24.0°C July 31, Aug. 3, 1977, Aug. 21, 1980; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 895 micromhos Dec. 17; minimum daily, 530 micromhos Oct. 1-31, Nov. 1-7, 9-30.
WATER TEMPERATURES: Maximum daily, 24.0°C on several days during August and September; minimum daily, 0.0°C on several days during January and February.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
NOV										
21...	1435	17300	800	8.2	9.9	2.0	9.6	ND	K106	240
DEC										
22...	1500	32400	884	8.2	4.8	1.4	11.1	K1	K130	240
JAN										
30...	1315	14200	780	8.1	.0	2.5	13.2	K4	K12	260
FEB										
18...	1330	4200	746	8.9	2.5	1.2	11.2	<1	K150	250
MAR										
17...	1330	9500	780	8.9	2.5	1.5	12.1	ND	K2	260
APR										
14...	1445	29100	794	8.8	5.0	14	11.6	--	>100	270
MAY										
12...	1400	44900	815	8.4	6.8	1.5	11.0	K1	<1	270
JUN										
19...	1100	24000	802	8.3	16.3	3.5	8.4	K2	K3	250
JUL										
10...	1100	44400	792	8.3	18.1	3.1	8.0	<1	K1	270
AUG										
17...	1400	55700	797	8.2	21.0	1.7	7.8	<1	42	250
SEP										
04...	0935	44000	798	8.1	20.3	18	7.6	<1	K3	250

< Less than.
> More than.
K Non-ideal colony count.
ND Not detected.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
NOV 21...	81	57	24	80	41	2.2	5.9	240	160	11
DEC 22...	84	58	24	80	41	2.2	4.6	240	160	14
JAN 30...	89	61	26	82	40	2.2	4.7	270	160	11
FEB 18...	89	57	26	89	43	2.5	5.0	280	160	11
MAR 17...	100	63	26	84	40	2.2	4.4	260	160	15
APR 14...	110	64	27	87	41	2.3	4.9	270	160	11
MAY 12...	98	63	27	86	41	2.3	4.8	280	170	11
JUN 19...	92	60	25	79	40	2.2	4.4	260	160	11
JUL 10...	51	64	27	84	40	2.2	4.6	250	220	15
AUG 17...	94	59	26	79	40	2.4	4.4	250	160	15
SEP 04...	94	59	26	79	40	2.4	4.7	260	160	17

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)
NOV 21...	.5	5.8	561	521	.76	26200	0	.11	.11	.040
DEC 22...	.5	5.5	543	523	.74	47500	2	.10	.11	.040
JAN 30...	.9	5.5	554	558	.75	21200	--	.04	.01	.210
FEB 18...	.5	6.0	555	571	.75	6290	4	.02	.01	.040
MAR 17...	.4	5.1	563	554	.77	14400	0	.00	.00	.000
APR 14...	.5	4.7	572	566	.78	44900	--	.02	.02	.050
MAY 12...	.3	4.3	583	579	.79	70700	3	.04	.08	.080
JUN 19...	.5	4.2	548	580	.75	35500	9	.03	.01	.060
JUL 10...	.4	4.3	560	582	.76	67100	--	.02	.03	.090
AUG 17...	.5	4.3	535	534	.73	80500	0	<.10	<.10	.120
SEP 04...	.5	4.7	537	547	.73	63000	12	.01	.02	.060

< Less than.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN DIS-SOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
NOV 21...	.05	.060	.55	.61	.59	.08	.67	.70	.78	3.5
DEC 22...	.05	.040	.43	.53	.47	.10	.57	.57	.68	3.0
JAN 30...	.27	.030	1.8	.46	2.0	.00	.49	2.0	.50	2.2
FEB 18...	.05	.020	.52	.50	.56	.00	.52	.58	.53	2.3
MAR 17...	.00	.040	.42	.49	.42	.11	.53	.42	.53	2.3
APR 14...	.06	.050	.38	.49	.43	.11	.54	.45	.56	2.5
MAY 12...	.10	.100	.91	.80	.99	.00	.90	1.0	.98	4.3
JUN 19...	.08	.070	.62	.77	.68	.16	.84	.71	.85	3.8
JUL 10...	.12	.080	1.1	1.0	1.2	.00	1.10	1.2	1.1	5.0
AUG 17...	.15	.110	.58	.42	.70	.00	.53	.61	.54	2.4
SEP 04...	.08	.050	.53	.52	.59	.00	.57	.60	.59	2.6

DATE	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	PHOSPHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
NOV 21...	.010	.010	.020	.06	.03	--	--	6.3	--
DEC 22...	.000	.020	.030	.09	.00	--	--	17	--
JAN 30...	--	.030	3.80	12	--	8.9	.5	--	--
FEB 18...	.000	.000	.000	.00	--	--	--	3.7	--
MAR 17...	.000	.010	.010	.03	--	--	--	6.1	860
APR 14...	--	.020	.020	.06	--	7.7	.1	--	--
MAY 12...	.050	.050	.040	.12	--	--	--	2.5	4000
JUN 19...	.010	.010	.010	.03	--	--	--	2.2	390
JUL 10...	--	.010	.030	.09	--	6.4	.3	2.0	170
AUG 17...	.000	.020	.020	.06	--	--	--	3.6	1600
SEP 04...	.020	.010	.020	.06	--	--	--	3.2	830

BEST DOCUMENT AVAILABLE

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 21...	1435	17300	42	1960	--	--	--	--	--	--	--	--
DEC 22...	1500	32400	26	2270	--	--	--	--	--	--	--	--
JAN 30...	1315	14200	69	2650	--	--	--	--	98	100	--	--
FEB 18...	1330	4200	35	397	--	--	--	--	--	--	--	--
MAR 17...	1330	9500	16	410	--	--	--	--	--	--	--	--
APR 14...	1445	29100	36	2830	--	--	--	--	86	87	90	94
MAY 12...	1400	44900	116	14100	--	--	--	--	56	66	94	100
JUN 19...	1100	24000	87	5640	98	--	--	--	100	--	--	--
JUL 10...	1100	44400	20	2400	98	--	--	--	100	--	--	--
AUG 17...	1400	55700	--	--	--	--	--	--	--	--	--	--
18...	1400	--	36	--	93	--	--	--	--	--	--	--
SEP 04...	0935	44000	53	6300	93	--	--	--	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)
JAN 30...	1315	1	0	2	0	--	<1	0	0	0	2
APR 14...	1445	1	0	2	1	0	2	20	10	10	0
JUL 10...	1100	2	0	2	1	--	<1	0	0	0	0

DATE	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
JAN 30...	--	<3	5	3	2	150	<10	8	6	2	30
APR 14...	--	<3	9	4	5	120	20	10	10	0	20
JUL 10...	--	<3	9	2	7	200	40	0	0	2	30

DATE	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
JAN 30...	20	7	.5	.4	.1	1	0	1	10	3	7
APR 14...	10	7	.6	.2	.4	1	0	1	20	10	10
JUL 10...	20	6	1.1	1.0	.1	0	0	1	20	10	8

< Less than.

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 21,80	MAR 17,81	MAY 12,81	JUN 19,81
TIME	1435	1330	1400	1100
TOTAL CELLS/ML	230	460	4000	390
DIVERSITY: DIVISION	0.3	0.0	0.2	0.8
.CLASS	0.3	0.0	0.2	0.8
..ORDER	0.3	0.0	0.2	0.9
...FAMILY	0.3	0.0	0.2	1.1
....GENUS	0.3	0.9	0.3	1.1

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...OOCYSTACEAE								
....ANKISTRODESMUS	--	-	--	-	--	-	51	13
....NEPHROCYTIUM	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	--	-
....SELENASTRUM	--	-	--	-	*	0	--	-
...SCENEDESMACEAE								
....SCENEDESMUS	--	-	--	-	--	-	26	7
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	--	-	13	3
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	--	-	--	-	--	-	--	-
..PENNALES								
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	320#	69	*	0	--	-
....FRAGILARIA	220#	94	140#	31	120	3	--	-
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....DINOBRYON	--	-	--	-	--	-	--	-
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	13	6	--	-	3900#	96	300#	77
....GOMPHOSPHAERIA	--	-	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....TRACHELOMONAS	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..GYMNODINIALES								
...GYMNODINIACEAE								
....GYMNODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	JUL 10,81	AUG 17,81	SEP 4,81
TIME	1100	1400	0935
TOTAL CELLS/ML	170	1600	830
DIVERSITY: DIVISION	1.2	0.5	0.8
.CLASS	1.2	0.6	0.8
..ORDER	1.6	0.9	0.8
...FAMILY	1.6	0.9	0.8
....GENUS	2.1	0.9	0.9

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	39#	23	--	-	--	-
....NEPHROCYTIUM	--	-	28	2	--	-
....OOCYSTIS	52#	31	--	-	56	7
....SELENASTRUM	--	-	--	-	--	-
...SCENEDESMACEAE						
....SCENEDESMUS	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	13	8	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	14	1	--	-
..PENNALES						
...FRAGILARIACEAE						
....ASTERIONELLA	--	-	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...OCHROMONADACEAE						
....DINOBRYON	--	-	--	-	14	2
....OCHROMONAS	--	-	28	2	28	3
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	13	8	--	-	--	-
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	28	3
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	52#	31	--	-	--	-
....GOMPHOSPHAERIA	--	-	1400#	87	700#	85
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	84	5	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....TRACHELOMONAS	--	-	42	3	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..GYMNODINIALES						
...GYMNODINIACEAE						
....GYMNODINIUM	--	-	14	1	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	775	790	860	850	865	840	840	875	---	820	760	780
2	765	795	870	850	---	835	860	880	---	810	760	760
3	765	790	860	840	840	810	830	875	850	820	760	780
4	765	800	860	840	840	815	830	860	890	800	760	798
5	770	790	825	840	865	815	840	865	840	810	770	780
6	770	790	865	830	530	835	830	875	850	840	780	790
7	765	790	850	840	---	810	830	860	820	810	760	780
8	760	790	880	830	---	860	840	870	850	840	760	780
9	720	790	860	840	---	840	830	860	830	820	780	780
10	760	785	875	800	---	850	830	865	830	792	800	770
11	770	780	865	850	---	850	830	865	840	820	780	770
12	765	800	865	840	835	850	860	815	820	810	780	780
13	755	795	870	840	835	840	840	---	830	800	760	780
14	760	785	865	840	845	850	794	860	810	800	760	780
15	750	780	855	850	850	850	850	860	850	800	760	780
16	760	790	860	840	880	840	850	865	840	800	750	780
17	760	790	895	840	830	780	840	865	820	830	797	780
18	755	780	890	840	746	840	850	860	800	800	760	780
19	760	795	870	850	830	840	880	870	802	790	750	760
20	755	795	880	840	830	840	850	860	850	780	760	780
21	760	800	865	850	830	840	860	860	840	820	760	780
22	760	795	884	830	830	850	830	860	820	800	760	780
23	760	790	860	840	840	855	840	860	820	800	750	780
24	760	795	850	850	840	850	870	855	850	780	750	780
25	760	800	850	850	830	875	---	---	850	800	750	760
26	765	790	860	840	840	860	850	860	820	800	750	780
27	760	795	840	840	840	850	860	860	850	800	740	780
28	760	790	880	830	840	845	870	850	830	800	740	760
29	755	795	850	830	---	840	860	855	840	800	750	760
30	760	795	860	780	---	840	840	850	840	800	750	780
31	765	---	875	850	---	840	---	850	---	800	750	---
MEAN	760	792	864	838	812	840	843	862	834	806	761	780

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	---	7.5	---	.0	2.5	4.0	10.5	---	19.5	---	23.0
2	17.0	---	7.0	---	.0	2.0	4.0	10.5	---	18.5	---	24.0
3	17.0	---	7.5	---	.0	2.0	4.0	10.5	16.0	---	---	22.0
4	18.0	---	7.0	---	.0	2.0	4.0	10.0	16.5	---	---	20.5
5	19.5	13.0	7.0	---	.0	2.5	4.5	9.0	17.0	19.0	---	23.0
6	18.5	12.0	6.5	---	.0	2.5	5.0	8.0	17.5	19.5	---	18.0
7	18.5	13.0	3.5	4.0	---	3.0	5.0	8.0	17.5	19.5	---	22.0
8	19.5	13.0	5.0	3.5	---	3.0	5.0	8.0	16.0	19.0	---	22.0
9	15.0	12.0	5.0	3.0	---	2.5	5.0	7.5	17.5	19.5	---	23.0
10	18.5	11.0	4.5	2.5	---	3.0	4.5	8.0	17.0	18.0	---	24.0
11	16.0	11.0	5.5	4.0	---	3.0	4.0	8.0	17.5	18.5	---	22.0
12	14.0	10.5	6.0	4.0	---	2.0	6.5	7.0	17.5	19.0	---	22.0
13	15.0	10.0	5.5	3.0	.5	3.0	5.0	---	17.0	19.5	24.0	23.0
14	14.5	10.0	6.0	3.0	1.0	4.0	5.0	7.5	17.0	19.0	24.0	22.0
15	14.0	10.5	6.0	2.5	1.0	4.0	6.0	7.5	17.5	18.5	23.0	20.0
16	13.5	10.0	5.5	2.5	1.0	4.0	5.0	9.0	17.5	18.5	20.5	22.0
17	12.5	10.0	5.5	2.5	2.0	2.5	5.0	9.5	17.0	---	21.0	22.0
18	13.0	10.0	5.0	3.0	2.5	3.0	5.5	10.0	17.5	---	22.5	24.0
19	14.5	10.0	4.5	3.0	3.0	3.5	6.0	11.5	16.5	---	23.0	22.0
20	14.5	9.5	4.0	3.5	3.0	4.0	6.0	11.0	17.5	---	23.0	22.0
21	14.0	10.0	4.0	3.5	2.5	3.5	5.5	10.0	18.5	---	24.0	21.0
22	13.0	10.0	5.0	4.0	2.0	4.0	6.5	---	18.5	---	22.0	23.0
23	11.0	9.5	4.0	4.0	1.5	4.0	7.0	9.0	18.5	---	22.0	22.0
24	11.5	9.5	3.5	4.0	1.5	5.0	8.0	10.0	19.0	---	23.0	24.0
25	11.0	9.0	4.0	2.5	1.5	3.0	---	9.5	19.0	---	24.0	22.0
26	11.0	8.5	4.0	3.0	2.0	3.0	9.0	9.0	19.0	---	23.0	19.0
27	10.5	8.5	4.5	3.0	2.0	3.0	8.5	10.0	19.5	---	24.0	19.0
28	10.5	8.5	4.0	2.5	2.5	3.5	9.0	10.5	18.5	---	24.0	22.0
29	10.5	9.0	4.0	1.0	---	3.5	9.0	11.0	19.5	---	24.0	19.0
30	11.0	8.5	4.0	.0	---	4.0	10.5	13.0	19.0	---	24.0	19.0
31	---	---	4.5	1.5	---	[illegible]	---	13.0	---	---	22.0	---
MEAN	14.5	10.5	5.0	3.0	1.5	3.0	6.0	9.5	17.5	19.0	23.0	22.0

06440000 MISSOURI RIVER AT PIERRE, SD--Continued

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    INITIAL DATE                      77/10/13  78/04/26  78/05/19  78/06/12  78/07/13  78/08/11  78/09/15  78/10/20
    INITIAL TIME-DEPTH-BOTTOM         1400 0001 1330 0001 1330 0001 1400 0001 1530 0001 1320 0001 1100 0001 0900 0001
00010 WATER     TEMP      CENT            12.5       6.0       9.0      17.0      19.0      20.0      20.0      12.0
00011 WATER     TEMP      FAHN            54.5      42.8      48.2      62.6      66.2      68.0      68.0      53.6
00020 AIR       TEMP      CENT            10.0      19.5      19.0      25.0      25.0      34.5      18.0       5.0
00032 CLOUD     COVER     PERCENT           50        70        70         0                             0         0
00035 WIND      VELOCITY  MPH             30.0      30.0      25.0       5.0                          10.0       5.0
00036 WIND.     DIR.FROM  NORTH=0          315        90       270       270                           270       270
00060 STREAM    FLOW      CFS            41000     25000     38700     43600     51600     54400     53500     46200
00065 STREAM    STAGE     FEET                      8.82      8.80      9.40               11.53
00094 CNDUCTVY  FIELD     MICROMHO         730       770       730       730       735       740       700       705
00299 DO        PROBE     MG/L            10.0      10.2      10.0      10.6       9.0       6.6       8.5       8.0
00301 DO        SATUR     PERCENT         94.3      81.6      86.2     109.3      95.7      71.7      92.4      74.1
00400 PH                  SU              8.90      8.40      8.60      8.70      8.40      8.40      8.10      8.10
01012 BERYLIUM  BE,TOT    UG/L                      0.00      0.00      1.00      0.00      0.00      0.00
01062 MOLY      MO,TOT    UG/L                         0         0         0        20         0         0
01067 NICKEL    NI,TOTAL  UG/L                         8                   8                   5         3
01105 ALUMINUM  AL,TOT    UG/L                       340                 190       460       150       150
01132 LITHIUM   LI,TOT    UG/L                        43        44        48        48        36        36
31616 FEC COLI  MFM-FCBR  /100ML                                15        10        12        10
71900 MERCURY   HG,TOTAL  UG/L                       0.0       0.0       0.0       0.0       0.0       0.0
    INITIAL DATE                      78/10/20  79/04/04  79/04/09  79/04/09  79/05/10  79/06/08  79/06/08  79/07/16
    INITIAL TIME-DEPTH-BOTTOM         1100      1100      1100      1300 0000 1500 0000 0930 0000 1100      1100
00010 WATER     TEMP      CENT                                         3.0       2.5      11.0
00011 WATER     TEMP      FAHN                                        37.4      36.5      51.8
00020 AIR       TEMP      CENT                                        10.0       0.0      14.0
00032 CLOUD     COVER     PERCENT                                       20       100         0
00035 WIND      VELOCITY  MPH                                                   20.0
00036 WIND      DIR.FROM  NORTH=0                                                 45
00094 CNDUCTVY  FIELD     MICROMHO                                     910       820       820
00299 DO        PROBE     MG/L                                         9.0      17.4       7.6
00301 DO        SATUR     PERCENT                                     66.7     123.9      68.5
00400 PH                  SU                                          7.40      8.00      7.90
01012 BERYLIUM  BE,TOT    UG/L                                0.00                                    0.00      1.00
01062 MOLY      MO,TOT    UG/L                                   0                                       0        20
01067 NICKEL    NI,TOTAL  UG/L                                   0                                       0         4
01105 ALUMINUM  AL,TOT    UG/L                                 140                                     260       850
01132 LITHIUM   LI,TOT    UG/L                                  49                                      43        49
71900 MERCURY   HG,TOTAL  UG/L             0.0       0.0       0.0                                                 0.9
    INITIAL DATE                      79/07/16  79/08/06  79/08/16  79/09/10  79/10/09  80/02/04  80/02/04  80/03/06
    INITIAL TIME-DEPTH-BOTTOM         1300 0000 1000 0000 1100      1100      1100      1100      1400 0000 1030 0000
00010 WATER     TEMP      CENT            17.0      16.0                                                 0.0       2.0
00011 WATER     TEMP      FAHN            62.6      60.8                                                32.0      35.6
00020 AIR       TEMP      CENT            16.0      22.0                                                12.0     10.0-
00025 BAROMTRC  PRESSURE  MM OF HG                                                                                 720
00032 CLOUD     COVER     PERCENT          100        20                                                  50        20
00035 WIND      VELOCITY  MPH              0.0      10.0                                                10.0      10.0
00036 WIND      DIR.FROM  NORTH=0                    135                                                 315
00061 STREAM    FLOW,     INST-CFS                                                                       300        35
00094 CNDUCTVY  FIELD     MICROMHO         770       790                                                 850       800
00299 DO        PROBE     MG/L             9.5       9.7                                                15.6      14.6
00301 DO        SATUR     PERCENT         97.9      97.0                                               106.8     105.6
00400 PH                  SU              7.70      7.70                                                8.70      8.90
00720 CYANIDE   CN-TOT    MG/L                                                             0.000
01012 BERYLIUM  BE,TOT    UG/L                                1.00      0.00      0.00
01062 MOLY      MO,TOT    UG/L                                   0         0         0
01067 NICKEL    NI,TOTAL  UG/L                                   9        10         9
01105 ALUMINUM  AL,TOT    UG/L                                 200       360       460
01132 LITHIUM   LI,TOT    UG/L                                  42        37        38
71900 MERCURY   HG,TOTAL  UG/L                                 6.5       3.5       1.0
    INITIAL DATE                      80/03/11  80/09/05  81/02/18  81/02/18  81/07/10  81/07/10
    INITIAL TIME-DEPTH-BOTTOM         1100      1330 0000 1300 0000 1500 0001 1100 0000 1100 0001
    FINAL DATE                                                    81/02/18            81/07/10
    FINAL TIME-NUMBER OF SAMPLES                                  1530 6              1120 6
    CP-SPACE OR TIME-STATISTICAL FUNC                             CP=S                CP=S
00010 WATER     TEMP      CENT                      20.7       2.5                18.1
00011 WATER     TEMP      FAHN                      69.3      36.5                64.6
00020 AIR       TEMP      CENT                      20.6      14.9                24.0
00032 CLOUD     COVER     PERCENT                                0                   0
00035 WIND      VELOCITY  MPH                                 10.0                 7.0
00036 WIND      DIR.FROM  NORTH=0                                0                 315
00061 STREAM    FLOW,     INST-CFS                 42000      4200                 400
00062 WATER     SURF ELE  IN FEET                   10.4
00065 STREAM    STAGE     FEET                                7.56                8.96
00094 CNDUCTVY  FIELD     MICROMHO                   863       746                 498
00299 DO        PROBE     MG/L                       8.2      11.2                 7.5
00301 DO        SATUR     PERCENT                   91.1      85.0                78.9
00400 PH                  SU                        8.20      8.90                8.40
00720 CYANIDE   CN-TOT    MG/L           0.000     0.000               0.000               0.000
31616 FEC COLI  MFM-FCBR  /100ML                                 0
39516 PCBS      WHL SMPL  UG/L           0.000                         0.000
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Analyses by Corps of Engineers.
Tables from STORET.

BEST DOCUMENT AVAILABLE

06441000 BAD RIVER NEAR MIDLAND, SD

LOCATION.--Lat 44°04'01", long 101°09'36", in NE¼NW¼ sec.7, T.1 N., R.25 E., Haakon County, Hydrologic Unit 10140102, on right bank at downstream side of bridge on State Highway 63, 0.4 mi (0.6 km) southwest of Midland, 2.0 mi (3.2 km) upstream from Mitchell Creek, and 3.7 mi (6.0 km) upstream from Ash Creek.

DRAINAGE AREA.--1,460 mi² (3,780 km²), approximately.

PERIOD OF RECORD.--October 1945 to current year. Prior to February 1946 monthly discharge only, published in WSP 1309.

REVISED RECORDS.--WSP 2117: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,849.14 ft (563.618 m) National Geodetic Vertical Datum of 1929. Prior to Feb. 21, 1961, nonrecording gage, and Feb. 21, 1961, to June 14, 1967, water-stage recorder at site 4.2 mi (6.8 km) downstream at datum 15.72 ft (4.791 m) lower. June 15 to July 26, 1967, nonrecording gage at site 30 ft (9 m) upstream and July 27, 1967, to June 14, 1971, water-stage recorder at site 60 ft (18 m) upstream, both at present datum.

REMARKS.--Records poor. Only daily discharges above 100 ft³/s (2.83 m³/s) are being published.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft³/s (833 m³/s) June 15, 1967, gage height, 24.44 ft (7.449 m), from floodmarks, 20.10 ft (6.126 m), from floodmarks, at former site and datum, from rating curve extended above 16,000 ft³/s (453 m³/s); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 544 ft³/s (15.4 m³/s) at 0700 hours, Aug. 14, gage height, 9.39 ft (2.862 m), no other peak above base of 500 ft³/s (14.2 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

Daily discharge, in cubic feet per second, above 100 ft³/s are given herewith:

Aug. 14 128

06441500 BAD RIVER NEAR FORT PIERRE, SD

LOCATION.--Lat 44°19'36", long 100°23'02", in NW¼NW¼ sec.10, T.4 N., R.31 E., Stanley County, Hydrologic Unit 10140102, on right bank at downstream side of highway bridge, 2.1 mi (3.4 km) south of Fort Pierre, 4.3 mi (6.9 km) downstream from Willow Creek, and 6.0 mi (9.7 km) upstream from mouth.

DRAINAGE AREA.--3,107 mi^2 (8,047 km^2).

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year. Monthly discharge only for July 1932 to February 1934, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 856: 1929(M), 1937.

GAGE.--Water-stage recorder. Datum of gage is 1,427.83 ft (435.203 m) National Geodetic Vertical Datum of 1929. Prior to July 10, 1951, nonrecording gage at same site and datum.

REMARKS.--Records fair. U.S. Weather Bureau gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years, 145 ft^3/s (4.106 m^3/s), 105,100 acre-ft/yr (130 hm^3/yr); median of yearly mean discharges, 98 ft^3/s (2.78 m^3/s), 71,000 acre-ft/yr (88 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 43,800 ft^3/s (1,240 m^3/s) June 18, 1967, gage height, 29.55 ft (9.007 m); no flow for long periods in each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1927 reached a stage of 30.89 ft (9.415 m), from floodmarks, discharge, about 55,000 ft^3/s (1,560 m^3/s). Flood in July 1905 reached a stage about 2 ft (0.610 m) higher than that in April 1927.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,140 ft^3/s (32.3 m^3/s) at 1800 hours, Oct. 16, gage height, 7.25 ft (2.210 m), no peak above base of 2,000 ft^3/s (56.6 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	11	.00	.40	.00	540	.00
2	.00	.00	.00	.00	.00	.00	.87	.00	.10	.00	317	.00
3	.00	.00	.00	.00	.00	.00	.66	.00	.00	.00	240	.00
4	.00	.00	.00	.00	.00	.00	.49	.00	.00	.00	165	.00
5	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	90	.00
6	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	12	.00
7	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	18	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	12	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.0	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.0	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.0	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	11	.00	2.0	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	10	4.0	5.0	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	22	36	10	.00
15	.00	.00	.00	.00	1.0	.00	.00	.00	17	1.6	50	.00
16	564	.00	.00	.00	5.0	.00	.00	.00	9.2	75	100	.00
17	174	.00	.00	.00	10	.00	.00	.00	3.0	403	57	.00
18	35	.00	.50	.00	15	.00	.00	.00	1.3	69	20	.00
19	4.4	.00	2.0	.00	20	.00	.00	.00	.80	11	10	.00
20	2.0	.00	1.5	.00	15	.00	.00	.00	.40	1.1	5.0	.00
21	1.0	.00	1.0	.00	10	.00	.00	.00	.10	.27	5.5	.00
22	.05	.00	.65	.00	8.8	.00	.00	.00	.05	.10	9.0	.00
23	.00	.00	.30	.00	9.8	.00	.00	.00	.00	.05	10	.00
24	.00	.00	.15	.00	7.5	.00	.00	.00	.00	.00	7.0	.00
25	.00	.00	.05	.00	5.0	.00	.00	.00	.00	.00	4.3	.00
26	.00	.00	.00	.10	2.0	.00	.00	.00	.00	.00	7.2	.00
27	.00	.00	.00	.30	1.0	.00	.00	30	.00	.00	1.5	.00
28	.00	.00	.00	.15	.00	.00	.00	12	.00	12	.50	.00
29	.00	.00	.00	.05	---	.00	.00	63	.00	4.1	.10	.00
30	.00	.00	.00	.00	---	.00	.00	6.6	.00	1.3	.05	.00
31	.00	---	.00	.00	---	40	---	1.3	---	12	.00	---
TOTAL	780.45	.00	6.15	.60	110.10	40.00	13.37	112.90	75.35	630.52	1708.15	.00
MEAN	25.2	.000	.20	.019	3.93	1.29	.45	3.64	2.51	20.3	55.1	.000
MAX	564	.00	2.0	.30	20	40	11	63	22	403	540	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	1550	.00	12	1.2	218	79	27	224	149	1250	3390	.00

CAL YR 1980 TOTAL 3008.04 MEAN 8.22 MAX 636 MIN .00 AC-FT 5970
WTR YR 1981 TOTAL 3477.59 MEAN 9.53 MAX 564 MIN .00 AC-FT 6900

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1972 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: October 1971 to current year.
WATER TEMPERATURES: October 1972 to current year.

REMARKS.--Records fair. No flow Oct. 1 to Mar. 14, Apr. 14-24, Apr. 30 to May 31, June 22-25, July 17 to Sept. 30. Sediment discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 114,000 mg/L June 27, 1980; minimum daily mean, 0 mg/L on many days each year.
SEDIMENT LOADS: Maximum daily, 783,000 tons (710,000 tonnes) May 2, 1972; minimum daily, 0 ton (0 tonne) on many days each year.

EXTREMES FOR 1980 WATER YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 114,000 mg/L June 27; minimum daily mean, 0 mg/L on many days.
SEDIMENT LOADS: Maximum daily, 185,000 tons (168,000 tonnes) July 6; minimum daily, 0 ton (0 tonne) on many days.

REVISIONS.--Revised figures for mean daily concentrations and daily sediment discharge for the water year 1980, superseding those published in the report for 1980, are given herewith.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	.00	0	.00	.00	0	.00	.00	0	.00
17	.00	0	.00	.00	0	.00	.00	0	.00
18	.00	0	.00	.00	0	.00	.00	0	.00
19	.00	0	.00	.00	0	.00	.00	0	.00
20	.00	0	.00	.00	0	.00	.00	0	.00
21	.00	0	.00	.00	0	.00	.00	0	.00
22	.00	0	.00	.00	0	.00	.00	0	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	0.00	---	0.00	0.00	---	0.00	0.00	---	0.00

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	1.1	160	.48
16	.00	0	.00	.00	0	.00	6.6	320	5.7
17	.00	0	.00	.00	0	.00	18	500	24
18	.00	0	.00	.00	0	.00	23	570	35
19	.00	0	.00	.00	0	.00	22	410	24
20	.00	0	.00	.00	0	.00	12	240	7.8
21	.00	0	.00	.00	0	.00	5.8	240	3.8
22	.00	0	.00	.00	0	.00	4.1	210	2.3
23	.00	0	.00	.00	0	.00	3.8	205	2.1
24	.00	0	.00	.00	0	.00	4.1	300	3.3
25	.00	0	.00	.00	0	.00	3.8	200	2.1
26	.00	0	.00	.00	0	.00	3.0	190	1.5
27	.00	0	.00	.00	0	.00	2.5	180	1.2
28	.00	0	.00	.00	0	.00	2.2	170	1.0
29	.00	0	.00	.00	0	.00	2.5	170	1.1
30	.00	0	.00	---	---	---	2.7	180	1.3
31	.00	0	.00	---	---	---	3.3	200	1.8
TOTAL	0.00	---	0.00	0.00	---	0.00	120.50	---	118.48
		APRIL			MAY			JUNE	
1	2.7	200	1.5	.00	0	.00	64	4450	769
2	2.2	190	1.1	.00	0	.00	82	8600	1900
3	2.2	190	1.1	.00	0	.00	4.4	1300	15
4	2.0	180	.97	.00	0	.00	.76	300	.6
5	1.8	180	.87	.00	0	.00	70	4710	890
6	1.6	170	.73	.00	0	.00	164	13000	5760
7	1.4	170	.64	.00	0	.00	95	10200	2620
8	5.5	500	7.4	.00	0	.00	68	8100	1490
9	3.6	380	3.7	.00	0	.00	17	3600	165
10	1.8	370	1.8	.00	0	.00	21	4200	238
11	1.3	350	1.2	.00	0	.00	23	4200	261
12	.99	300	.80	.00	0	.00	9.2	1400	35
13	.03	278	.02	.00	0	.00	3.6	700	6.8
14	.00	0	.00	.00	0	.00	2.0	800	4.3
15	.00	0	.00	.00	0	.00	.66	200	.4
16	.00	0	.00	.00	0	.00	.66	200	.4
17	.00	0	.00	.00	0	.00	1.3	300	1.1
18	.00	0	.00	.00	0	.00	.99	400	1.1
19	.00	0	.00	.00	0	.00	.50	300	.4
20	.00	0	.00	.00	0	.00	.25	150	.1
21	.00	0	.00	.00	0	.00	.10	50	.0
22	.00	0	.00	.00	0	.00	.00	0	.0
23	.00	0	.00	.00	0	.00	.00	0	.0
24	.00	0	.00	.00	0	.00	.00	0	.0
25	.04	10	.00	.00	0	.00	.00	0	.0
26	.04	10	.00	.00	0	.00	9.0	100	2.4
27	.04	10	.00	.00	0	.00	372	114000	115000
28	.03	10	.00	.00	0	.00	51	70500	9710
29	.01	5	.00	.00	0	.00	7.0	15000	283
30	.00	0	.00	.00	0	.00	2.5	1000	6.8
31	---	---	---	.00	0	.00	---	---	---
TOTAL	27.28	---	21.83	0.00	---	0.00	1069.92	---	139160.4

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.87	400	.9	.00	0	.00	.00	0	.00
2	.27	100	.1	.00	0	.00	.00	0	.00
3	.10	20	.0	.00	0	.00	.00	0	.00
4	.10	10	.0	.00	0	.00	.00	0	.00
5	251	16000	10800	.00	0	.00	.00	0	.00
6	630	108000	185000	.00	0	.00	.00	0	.00
7	51	48200	6640	.00	0	.00	.00	0	.00
8	38	45000	4620	.00	0	.00	.00	0	.00
9	17	45000	2070	.00	0	.00	.00	0	.00
10	6.2	40000	670	.00	0	.00	.00	0	.00
11	1.5	15500	50	.00	0	.00	.00	0	.00
12	.80	900	1.9	.00	0	.00	.00	0	.00
13	.50	500	.7	.00	0	.00	.00	0	.00
14	.30	100	.1	.00	0	.00	.00	0	.00
15	.20	50	.0	.00	0	.00	.00	0	.00
16	.10	10	.0	.00	0	.00	.00	0	.00
17	.00	0	.0	.00	0	.00	.00	0	.00
18	.00	0	.0	.00	0	.00	.00	0	.00
19	.00	0	.0	.00	0	.00	.00	0	.00
20	.00	0	.0	.00	0	.00	.00	0	.00
21	.00	0	.0	.00	0	.00	.00	0	.00
22	.00	0	.0	.00	0	.00	.00	0	.00
23	.00	0	.0	.00	0	.00	.00	0	.00
24	.00	0	.0	.00	0	.00	.00	0	.00
25	.00	0	.0	.00	0	.00	.00	0	.00
26	.00	0	.0	.00	0	.00	.00	0	.00
27	.00	0	.0	.00	0	.00	.00	0	.00
28	.00	0	.0	.00	0	.00	.00	0	.00
29	.00	0	.0	.00	0	.00	.00	0	.00
30	.00	0	.0	.00	0	.00	.00	0	.00
31	.00	0	.0	.00	0	.00	---	---	---
TOTAL	1003.74	---	209857.7	0.00	---	0.00	0.00	---	0.00

WATER QUALITY DATA, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980

DATE	DATE ILLEGAL CODE	TIME	TEMPER-ATURE (DEG C) (00010)	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
MAR												
19...	--	1425	3.0	--	269	--	--	95	97	100	--	--
25...	--	1425	4.5	3.8	200	--	--	97	99	100	--	--
29...	--	1530	5.5	2.5	173	--	--	80	97	100	--	--
APR												
13...	--	1430	14.0	.03	278	--	62	--	--	--	--	--
30...	--	1430	14.0	--	140	--	--	81	100	--	--	--
JUN												
01...	--	2040	21.0	144	6820	--	--	97	98	99	100	--
03...	--	1630	24.0	2.2	954	--	--	96	97	98	99	100
06...	--	1600	23.5	134	14400	--	--	100	--	--	--	--
11...	--	1730	27.0	18	2880	--	--	97	97	98	100	--
17...	--	1920	26.5	2.5	308	--	75	--	--	--	--	--

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
RANDOM INSTANTANEOUS

MAR 17	2.0	MAR 29	5.5	APR 30	14.0	JUN 6	23.5	JUN 27	23.5	JUL 6	22.5
19	3.0	APR 13	14.0	JUN 1	21.0	11	27.0	28	23.0	7	24.0
24	1.0	25	13.0	3	24.0	17	26.5	29	28.0	9	29.0
25	4.5										

BEST DOCUMENT AVAILABLE

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1972 to current year.

PERIOD OF DAILY RECORD.--
SUSPENDED SEDIMENT DISCHARGE: October 1971 to current year.
WATER TEMPERATURES: October 1972 to current year.

REVISED RECORDS.--WRD SD-81-1: 1979-80.

REMARKS.--Records fair. No flow Oct. 1-15, Oct. 22 to Dec. 17, Dec. 16 to Jan. 25, Jan. 30 to Feb. 14, Feb. 28 to Mar. 30, Apr. 8 to May 26, June 3-11, June 23 to July 12, July 24-27, Aug. 31 to Sept. 30. Sediment discharge records prior to Oct. 1, 1971, on file in the District office, Corps of Engineers, Omaha, NE.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 124,000 mg/L July 17, 1981; minimum daily mean, 0 mg/L on many days each year.
SEDIMENT LOADS: Maximum daily, 783,000 tons (710,000 tonnes) May 2, 1972; minimum daily, 0 ton (0 tonne) on many days each year.

EXTREMES FOR CURRENT YEAR.--
SEDIMENT CONCENTRATIONS: Maximum daily mean, 124,000 mg/L July 17; minimum daily mean, 0 mg/L on many days.
SEDIMENT LOADS: Maximum daily, 135,000 tons (122,500 tonnes) July 17; minimum daily, 0 ton (0 tonne) on many days.

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		OCTOBER			NOVEMBER			DECEMBER	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	.00	0	.00	.00	0	.00
16	564	35000	53300	.00	0	.00	.00	0	.00
17	174	40100	18800	.00	0	.00	.00	0	.00
18	35	44800	4230	.00	0	.00	.50	250	.34
19	4.4	27200	323	.00	0	.00	2.0	700	3.8
20	2.0	2560	14	.00	0	.00	1.5	500	2.0
21	1.0	500	1.4	.00	0	.00	1.0	350	.95
22	.05	50	.00	.00	0	.00	.65	240	.42
23	.00	0	.00	.00	0	.00	.30	200	.16
24	.00	0	.00	.00	0	.00	.15	100	.04
25	.00	0	.00	.00	0	.00	.05	20	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	.00	0	.00	.00	0	.00
28	.00	0	.00	.00	0	.00	.00	0	.00
29	.00	0	.00	.00	0	.00	.00	0	.00
30	.00	0	.00	.00	0	.00	.00	0	.00
31	.00	0	.00	---	---	---	.00	0	.00
TOTAL	780.45	---	76668.40	0.00	---	0.00	6.15	---	7.71

BEST DOCUMENT AVAILABLE

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCENTRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JANUARY			FEBRUARY			MARCH	
1	.00	0	.00	.00	0	.00	.00	0	.00
2	.00	0	.00	.00	0	.00	.00	0	.00
3	.00	0	.00	.00	0	.00	.00	0	.00
4	.00	0	.00	.00	0	.00	.00	0	.00
5	.00	0	.00	.00	0	.00	.00	0	.00
6	.00	0	.00	.00	0	.00	.00	0	.00
7	.00	0	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	.00	0	.00
13	.00	0	.00	.00	0	.00	.00	0	.00
14	.00	0	.00	.00	0	.00	.00	0	.00
15	.00	0	.00	1.0	50	.14	.00	0	.00
16	.00	0	.00	5.0	350	4.7	.00	0	.00
17	.00	0	.00	10	760	21	.00	0	.00
18	.00	0	.00	15	800	32	.00	0	.00
19	.00	0	.00	20	720	39	.00	0	.00
20	.00	0	.00	15	750	30	.00	0	.00
21	.00	0	.00	10	800	22	.00	0	.00
22	.00	0	.00	8.8	680	16	.00	0	.00
23	.00	0	.00	9.8	670	18	.00	0	.00
24	.00	0	.00	7.5	420	8.5	.00	0	.00
25	.00	0	.00	5.0	250	3.4	.00	0	.00
26	.10	400	.11	2.0	200	1.1	.00	0	.00
27	.30	1200	.97	1.0	80	.22	.00	0	.00
28	.15	600	.24	.00	0	.00	.00	0	.00
29	.05	200	.03	---	---	---	.00	0	.00
30	.00	0	.00	---	---	---	.00	0	.00
31	.00	0	.00	---	---	---	40	6500	702
TOTAL	0.60	---	1.35	110.10	---	196.06	40.00	---	702.00
		APRIL			MAY			JUNE	
1	11	3400	101	.00	0	.00	.40	500	.54
2	.87	100	.23	.00	0	.00	.10	100	.03
3	.66	75	.13	.00	0	.00	.00	0	.00
4	.49	50	.07	.00	0	.00	.00	0	.00
5	.20	20	.01	.00	0	.00	.00	0	.00
6	.10	10	.00	.00	0	.00	.00	0	.00
7	.05	10	.00	.00	0	.00	.00	0	.00
8	.00	0	.00	.00	0	.00	.00	0	.00
9	.00	0	.00	.00	0	.00	.00	0	.00
10	.00	0	.00	.00	0	.00	.00	0	.00
11	.00	0	.00	.00	0	.00	.00	0	.00
12	.00	0	.00	.00	0	.00	11	29000	861
13	.00	0	.00	.00	0	.00	10	29400	794
14	.00	0	.00	.00	0	.00	22	27600	1640
15	.00	0	.00	.00	0	.00	17	10200	468
16	.00	0	.00	.00	0	.00	9.2	2200	55
17	.00	0	.00	.00	0	.00	3.0	1500	12
18	.00	0	.00	.00	0	.00	1.3	1000	3.5
19	.00	0	.00	.00	0	.00	.80	500	1.1
20	.00	0	.00	.00	0	.00	.40	250	.27
21	.00	0	.00	.00	0	.00	.10	100	.03
22	.00	0	.00	.00	0	.00	.05	50	.00
23	.00	0	.00	.00	0	.00	.00	0	.00
24	.00	0	.00	.00	0	.00	.00	0	.00
25	.00	0	.00	.00	0	.00	.00	0	.00
26	.00	0	.00	.00	0	.00	.00	0	.00
27	.00	0	.00	30	14100	1140	.00	0	.00
28	.00	0	.00	12	19000	616	.00	0	.00
29	.00	0	.00	63	78200	13300	.00	0	.00
30	.00	0	.00	6.6	57000	1020	.00	0	.00
31	---	---	---	1.3	23000	81	---	---	---
TOTAL	13.37	---	101.44	112.90	---	16157.00	75.35	---	3835.47

06441500 BAD RIVER NEAR FORT PIERRE, SD--Continued

SEDIMENT DISCHARGE, SUSPENDED (TONS/DAY), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)	MEAN DISCHARGE (CFS)	MEAN CONCEN-TRATION (MG/L)	SEDIMENT DISCHARGE (TONS/DAY)
		JULY			AUGUST			SEPTEMBER	
1	.00	0	.0	540	54300	79200	.00	0	.00
2	.00	0	.0	317	49400	42300	.00	0	.00
3	.00	0	.0	240	15000	9720	.00	0	.00
4	.00	0	.0	165	10000	4450	.00	0	.00
5	.00	0	.0	90	4000	972	.00	0	.00
6	.00	0	.0	12	1200	39	.00	0	.00
7	.00	0	.0	18	1200	58	.00	0	.00
8	.00	0	.0	12	1200	39	.00	0	.00
9	.00	0	.0	6.0	600	9.7	.00	0	.00
10	.00	0	.0	3.0	300	2.4	.00	0	.00
11	.00	0	.0	1.0	100	.3	.00	0	.00
12	.00	0	.0	2.0	600	3.2	.00	0	.00
13	4.0	3250	35	5.0	1200	16	.00	0	.00
14	36	66300	6440	10	2200	59	.00	0	.00
15	1.6	49000	212	50	10000	1350	.00	0	.00
16	75	65200	13200	100	20000	5400	.00	0	.00
17	403	124000	135000	57	15000	2310	.00	0	.00
18	69	72000	13400	20	6000	324	.00	0	.00
19	11	9200	273	10	2000	54	.00	0	.00
20	1.1	1800	5.3	5.0	800	11	.00	0	.00
21	.27	400	.3	5.5	900	13	.00	0	.00
22	.10	200	.1	9.0	3000	73	.00	0	.00
23	.05	50	.0	10	4000	108	.00	0	.00
24	.00	0	.0	7.0	3000	57	.00	0	.00
25	.00	0	.0	4.3	1500	17	.00	0	.00
26	.00	0	.0	7.2	500	9.7	.00	0	.00
27	.00	0	.0	1.5	100	.4	.00	0	.00
28	12	600	19	.50	50	.1	.00	0	.00
29	4.1	400	4.4	.10	30	.0	.00	0	.00
30	1.3	300	1.1	.05	10	.0	.00	0	.00
31	12	---	---	.00	0	.0	---	---	---
TOTAL	630.52	---	168590.2	1708.15	---	186595.8	0.00	---	0.00

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	DATE ILLEGAL CODE	TIME	TEMPER-ATURE (DEG C) (00010)	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
JUN 18...	--	1600	29.0	.94	858	2.2	83	87	90	94	96	100
JUL 28...	--	1315	21.0	13	570	20	100	--	--	--	--	--
AUG 24...	--	0830	20.5	9.2	4910	122	100	100	--	--	--	--

TEMPERATURE (DEG. C) OF WATER, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
RANDOM INSTANTANEOUS

OCT 16	8.0	OCT 20	12.0	FEB 24	1.0	MAY 28	17.0	JUN 18	23.0	AUG 2	25.0
17	5.0	JAN 27	0	MAR 31	7.0	30	23.5	18	29.0	6	25.0
18	7.5	FEB 17	.5	APR 1	13.0	JUN 14	27.5	21	25.5	17	22.0
19	10.0	23	3.5	MAY 28	23.0	17	24.0	JUL 28	21.0	24	20.5

06442000 MEDICINE KNOLL CREEK NEAR BLUNT, SD

LOCATION.--Lat 44°33'46", long 99°54'50", in NW¼ sec.31, T.113 N., R.75 W., Sully County, Hydrologic Unit 10140103, on left bank at downstream side of highway bridge, 4.8 mi (7.7 km) northeast of Blunt and 5.5 mi (8.8 km) upstream from South Fork Medicine Knoll Creek.

DRAINAGE AREA.--317 m^2 (821 km^2).

PERIOD OF RECORD.--March 1950 to current year. Prior to October 1959, published as Medicine Creek near Blunt.

REVISED RECORDS.--WRD SD-76-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,611.08 ft (491.057 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 31, 1950, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--31 years, 4.61 ft^3/s (0.131 m^3/s), 3,340 acre-ft/yr (4.12 hm^3/yr); median of yearly mean discharges, 0.81 ft^3/s (0.02 m^3/s), 590 acre-ft/yr (0.73 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,830 ft^3/s (51.8 m^3/s) Apr. 5, 1952, gage height, 12.34 ft (3.761 m), from floodmarks; maximum gage height, 13.2 ft (4.02 m) between Mar. 26-29, 1950, from floodmarks (backwater from ice); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--No flow during year. No peak above base of 50 ft^3/s (1.42 m^3/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

No flow during year

06442500 MEDICINE CREEK AT KENNEBEC, SD

LOCATION.--Lat 43°54'17", long 99°52'35", in NW¼NE¼ sec.18, T.105 N., R.75 W., Lyman County, Hydrologic Unit 10140104, on right bank 4 ft (1 m) downstream from highway bridge, 0.5 mi (0.8 km) west of Kennebec and 0.5 mi (0.8 km) downstream from small right-bank tributary.

DRAINAGE AREA.--465 mi² (1,200 km²), approximately.

PERIOD OF RECORD.--July 1954 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,659.64 ft (505.858 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 28, 1954, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--27 years, 14.0 ft³/s (0.396 m³/s), 10,140 acre-ft/yr (12.5 hm³/yr); median of yearly mean discharges, 6.3 ft³/s (0.18 m³/s), 4,600 acre-ft/yr (5.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 8,970 ft³/s (254 m³/s) Mar. 28, 1960, gage height, 16.71 ft (5.093 m); no flow for many days each year.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1952 reached a stage of 17.0 ft (5.18 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.63 ft³/s (0.018 m³/s) at 2230 hours, Mar. 31, gage height, 1.18 ft (0.360 m), no peak above base of 100 ft³/s (2.83 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.05	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.05	.20	.00	.00	.00	.03	.00
MEAN	.000	.000	.000	.000	.000	.002	.007	.000	.000	.000	.001	.000
MAX	.00	.00	.00	.00	.00	.05	.20	.00	.00	.00	.01	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.10	.4	.00	.00	.00	.06	.00

CAL YR 1980 TOTAL 1.97 MEAN .005 MAX 1.3 MIN .00 AC-FT 3.9
WTR YR 1981 TOTAL 0.28 MEAN .001 MAX .20 MIN .00 AC-FT .6

06442700 LAKE SHARPE NEAR FORT THOMPSON, SD

LOCATION.--Lat 44°02'18", long 99°26'45", in SE¼ sec.27, T.107 N., R.72 W., Lyman County, Hydrologic Unit 10140101, at left approach wall of powerhouse at Big Bend Dam on Missouri River, 2.5 mi (4.0 km) south of Fort Thompson, and at mile 987.4 (1,588.7 km).

DRAINAGE AREA.--249,300 mi² (645,700 km²), approximately.

PERIOD OF RECORD.--July 1963 to current year (monthend contents only).

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929.

REMARKS.--Reservoir is formed by earth-fill dam; closure made July 1963; intentional storage began November 1963. Maximum capacity, 1,908,000 acre-ft (2,350 hm³) below elevation, 1,423.0 ft (433.73 m), top of spillway gates. Normal maximum, 1,730,000 acre-ft (2,130 hm³) below elevation 1,420.0 ft (432.82 m). Inactive storage, 1,459,000 acre-ft (1,800 hm³) below elevation 1,415.0 ft (431.29 m). From capacity table put into use Mar. 1, 1981: Maximum capacity, 1,884,000 acre-ft (2,320 hm³). Normal maximum, 1,699,000 acre-ft (2,320 hm³). Inacti Inactive storage, 1,424,000 acre-ft (1,760 hm³). Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of a concrete chute with flat crest at elevation 1,385.0 ft (422.15 m) surmounted by 8 taintor gates, each 40 by 38 ft (12.2 X 11.6 m); design capacity, 390,000 ft³/s (11,000 m³/s). Normal releases are through 8 power units (completed in July 1966), with a generating capacity of 58,500 kilowatts each. Maximum release through powerplant about 100,000 ft³/s (2,830 m³/s). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevation and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 1,829,000 acre-ft (2,260 hm³) Apr. 22, 1971, affected by wind; minimum since initial filling, 1,448,000 acre-ft (1,790 hm³) Sept. 17, 1967, affected by wind.

EXTREMES FOR CURRENT YEAR.--Period of Oct. 1 to Feb. 28: Maximum contents, 1,806,000 acre-ft (2,230 hm³) Jan. 11; minimum contents, 1,707,000 acre-ft (2,100 hm³) Oct. 1. Period of Mar. 1 to Sept. 30: Maximum contents, 1,773,000 acre-ft (2,190 hm³) May 31; minimum contents, 1,663,000 acre-ft (2,050 hm³) June 27.

CORRECTIONS.--Capacity and storage figures in the REMARKS paragraph are in error for some years. The following table gives the correct figures for water years 1964-80.

Date	Maximum capacity	Normal maximum	Inactive storage
July 1963 to June 30, 1972	1,900,000	1,725,000	1,465,000
July 1, 1972 to Dec. 31, 1977	1,915,000	1,738,000	1,466,000
Jan. 1, 1978 to Sept. 30, 1980	1,908,000	1,730,000	1,459,000

Elevations shown in EXTREMES FOR PERIOD OF RECORD and EXTREMES FOR CURRENT YEAR, for water years 1964-80, may have been incorrectly computed and may be slightly in error.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents
Sept. 30	1419.57	1697000	
Oct. 31	1420.78	1774000	+77000
Nov. 30	1421.20	1802000	+28000
Dec. 31	1420.87	1771000	-31000
CAL YR 1980			-12000
Jan. 31	1420.44	1750000	-21000
Feb. 28	1420.62	1765000	+15000
Feb. 28	1420.62	*1736000	-29000
Mar. 31	1421.12	1762000	+26000
Apr. 30	1420.11	1705000	-57000
May 31	1421.29	1773000	+68000
June 30	1419.86	1702000	-71000
July 31	1419.53	1670000	-32000
Aug. 31	1420.70	1743000	+73000
Sept. 30	1420.57	1723000	-20000
WTR YR 1981			+26000

NOTE.--Reservoir frozen over Feb. 9 to Mar. 17.
*New capacity table put into use Mar. 1, 1981.

06442950 CROW CREEK NEAR GANN VALLEY, SD

LOCATION.--Lat 43°59'29", long 99°13'07", in NE¼NW¼ sec.15, T.106 N., R.70 W., Buffalo County, Hydrologic Unit 10140105, near center of span at downstream side of highway bridge, 6.4 mi (10.3 km) upstream from Smith Creek, 6.9 mi (11.1 km) downstream from Elm Creek, and 12.0 mi (19.3 km) southwest of Gann Valley.

DRAINAGE AREA.--670 mi² (1,740 km²), approximately.

PERIOD OF RECORD.--October 1971 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 1,434.73 ft (437.306 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good.

AVERAGE DISCHARGE.--10 years, 18.1 ft³/s (0.513 m³/s), 13,110 acre-ft/yr (16.2 hm³/yr); median of yearly mean discharges, 7.5 ft³/s (0.21 m³/s), 5,400 acre-ft/yr (6.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,900 ft³/s (110 m³/s) Mar. 22, 1978, gage height, 14.60 ft (4.450 m); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 253 ft³/s (7.16 m³/s) at 1000 hours, Apr. 1, gage height, 5.40 ft (1.646 m), no other peak above base of 150 ft³/s (4.25 m³/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)

2.5	0	2.8	3.1	3.5	33
2.6	.57	3.0	7.2	4.0	75
2.7	1.6	3.2	15	5.0	197

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	111	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	12	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	11	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	8.0	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	2.6	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	1.8	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	1.4	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.93	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.57	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	1.0	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	2.5	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	5.6	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	55	---	.00	---	.00	.00	---
TOTAL	27.00	.00	.00	.00	.00	63.10	149.67	.00	.00	.00	.00	.00
MEAN	.87	.000	.000	.000	.000	2.04	4.99	.000	.000	.000	.000	.000
MAX	26	.00	.00	.00	.00	55	111	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	54	.00	.00	.00	.00	125	297	.00	.00	.00	.00	.00

CAL YR 1980 TOTAL 1056.36 MEAN 2.89 MAX 935 MIN .00 AC-FT 2100
WTR YR 1981 TOTAL 239.77 MEAN .66 MAX 111 MIN .00 AC-FT 476

06445980 WHITE CLAY CREEK NEAR OGLALA, SD

LOCATION.--Lat 43°08'46", long 102°40'58", in SE¼SE¼ sec.30, T.37 N., R.45 W., Shannon County, Hydrologic Unit 10140201, on left bank at downstream side of bridge on U.S. Highway 18, 4.3 mi (6.9 km) southeast of Oglala, 5.5 mi (8.8 km) upstream from Oglala Dam, and 11 mi (18 km) northwest of Pine Ridge.

DRAINAGE AREA.--340 mi² (880 km²), approximately.

PERIOD OF RECORD.--August 1965 to current year.

GAGE.--Water-stage recorder. Datum of gage is 3,001.54 ft (914.869 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Some storage and possible regulation above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--16 years, 10.9 ft³/s (0.309 m³/s), 7,900 acre-ft/yr (9.74 hm³/yr); median of yearly mean discharges, 9.0 ft³/s (0.26 m³/s), 6,500 acre-ft/yr (8.0 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 659 ft³/s (18.7 m³/s) June 16, 1967, gage height, 14.74 ft (4.493 m); maximum gage height, 15.02 ft (4.578 m) Mar. 11, 1966 (backwater from ice); no flow at times in 1965, 1970, 1973-75, 1978, 1980, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 126 ft³/s (3.57 m³/s) at 2000 hours, Aug. 5, gage height, 10.14 ft (3.091 m), no peak above base of 150 ft³/s (4.25 m³/s); no flow July 10-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.7	3.2	3.8	12	10	12	9.4	7.5	10	6.7	6.2	5.0
2	2.6	3.4	3.7	12	10	12	10	6.7	8.7	12	5.4	4.6
3	2.5	3.5	4.0	12	10	12	10	6.9	7.9	2.7	4.7	7.0
4	2.1	3.5	4.4	13	10	12	10	7.6	6.9	2.0	6.6	6.8
5	2.5	3.5	4.4	13	10	13	10	8.6	6.9	1.3	68	6.5
6	1.7	3.5	4.3	12	11	14	9.4	8.7	6.7	.80	73	6.2
7	2.0	3.3	4.4	12	11	15	9.9	8.6	6.1	.35	32	5.8
8	2.0	3.3	4.4	11	10	16	9.9	10	6.0	.14	25	5.6
9	2.4	3.3	4.4	11	9.0	16	10	10	6.2	.04	16	5.6
10	3.0	3.3	5.0	11	8.0	16	10	9.4	7.2	.00	15	5.2
11	3.1	3.1	5.5	11	8.5	15	11	8.9	7.2	.00	14	4.3
12	.99	3.1	6.0	10	9.0	11	10	8.0	8.9	.00	13	6.0
13	1.9	3.1	6.0	10	10	9.9	11	7.5	9.4	.00	13	4.2
14	1.2	3.0	6.0	11	10	9.9	8.9	7.9	8.3	.24	12	3.0
15	2.1	3.0	7.0	11	10	10	8.5	8.3	7.2	7.6	11	2.0
16	2.6	3.3	8.0	11	11	9.4	9.4	8.3	7.0	8.5	10	1.4
17	2.8	3.5	9.0	10	11	9.2	7.5	7.6	5.7	9.0	12	1.3
18	2.5	3.8	9.0	10	12	9.6	7.6	8.0	6.0	5.0	20	1.1
19	2.3	3.8	8.5	11	12	9.6	9.0	9.2	5.8	10	35	.92
20	2.3	3.8	8.0	11	12	9.7	9.4	9.4	5.7	7.0	60	.85
21	2.6	4.0	8.0	11	12	12	11	8.5	4.9	6.0	40	.92
22	2.7	4.0	9.0	12	11	11	11	7.4	3.0	14	30	1.4
23	2.9	3.8	10	12	11	11	9.0	7.9	4.7	11	21	3.0
24	2.9	3.8	10	13	11	11	8.6	8.6	5.1	9.0	15	10
25	2.9	3.8	9.5	13	11	11	7.9	8.3	6.5	8.5	10	4.4
26	2.8	3.8	9.5	12	11	11	8.0	7.9	6.2	9.5	7.2	2.0
27	2.7	3.8	10	11	10	11	7.9	7.5	7.2	9.0	5.0	3.0
28	2.7	4.0	11	11	11	11	8.6	8.3	6.6	8.0	10	3.3
29	2.7	4.0	12	11	---	11	7.5	16	6.7	7.5	9.0	3.5
30	2.9	4.0	12	11	---	10	7.0	17	6.0	6.4	7.7	3.8
31	3.0	---	12	10	---	10	---	12	---	7.0	6.0	---
TOTAL	76.09	106.3	228.8	352	292.5	361.3	277.4	276.5	200.7	169.27	612.8	118.69
MEAN	2.45	3.54	7.38	11.4	10.4	11.7	9.25	8.92	6.69	5.46	19.8	3.96
MAX	3.1	4.0	12	13	12	16	11	17	10	14	73	10
MIN	.99	3.0	3.7	10	8.0	9.2	7.0	6.7	3.0	.00	4.7	.85
AC-FT	151	211	454	698	580	717	550	548	398	336	1220	236

CAL YR 1980 TOTAL 4482.69 MEAN 12.2 MAX 147 MIN .00 AC-FT 8890
WTR YR 1981 TOTAL 3072.55 MEAN 8.42 MAX 73 MIN .00 AC-FT 6090

BEST DOCUMENT AVAILABLE

06446000 WHITE RIVER NEAR OGLALA, SD

LOCATION.--Lat 43°15'17", long 102°49'29", in SW¼NE¼ sec.24, T.38 N., R.47 W., Shannon County, Hydrologic Unit 10140201, on right bank at downstream side of bridge, 3.0 mi (4.8 km) downstream from Blacktail Creek and 7.0 mi (11.3 km) northwest of Oglala.

DRAINAGE AREA.--2,200 mi² (5,700 km²), approximately.

PERIOD OF RECORD.--May 1943 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,853.54 ft (869.759 m) National Geodetic Vertical Datum of 1929. Prior to May 6, 1947, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Some diversions for irrigation above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--38 years, 52.7 ft³/s (1.492 m³/s), 38,180 acre-ft/yr (47.1 hm³/yr); median of yearly mean discharges, 44 ft³/s (1.25 m³/s), 31,900 acre-ft/yr (39 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,200 ft³/s (147 m³/s) June 21, 1947, gage height, 23.50 ft (7.163 m), from rating curve extended above 2,800 ft³/s (79.3 m³/s) on basis of velocity-area studies; maximum gage height, 23.61 ft (7.196 m) June 16, 1967; no flow at times in 1952, 1954, 1957, 1961, 1964, 1965, 1970-76, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 319 ft³/s (9.03 m³/s) at 0845 hours, July 22, gage height, 9.07 ft (2.765 m), no peak above base of 800 ft³/s (22.7 m³/s); no flow July 11-13.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.3	7.0	5.5	10	10	35	14	9.1	9.9	1.0	31	6.7
2	4.5	6.5	6.0	11	10	34	13	13	14	174	21	3.9
3	11	6.0	7.0	11	10	39	13	9.6	11	45	15	5.5
4	4.1	5.5	7.0	10	9.0	47	13	10	7.7	13	14	3.6
5	5.5	5.5	6.5	11	8.0	26	13	9.6	5.9	7.0	137	2.0
6	3.9	5.5	6.5	11	9.0	26	13	11	7.4	2.7	91	.98
7	5.2	5.0	6.5	11	10	23	14	16	8.8	1.5	59	1.0
8	6.4	5.0	6.5	12	11	23	14	18	7.3	.70	47	.93
9	5.3	5.0	6.5	12	13	23	15	13	5.6	.35	48	.67
10	4.5	5.0	7.0	12	15	21	14	10	3.8	.05	46	.57
11	1.8	4.5	7.0	12	15	20	13	8.5	5.3	.00	57	8.9
12	.30	4.5	7.0	12	13	19	12	14	7.9	.00	37	12
13	.25	4.5	8.0	11	12	18	12	12	7.4	.00	32	9.1
14	.35	4.5	8.0	11	14	18	12	9.9	9.3	.00	21	8.0
15	2.3	4.5	9.0	10	16	18	10	8.2	12	39	14	10
16	2.6	4.5	11	10	19	17	9.7	7.4	5.3	30	9.6	6.1
17	3.7	5.0	12	10	21	17	9.4	8.2	2.0	57	26	3.7
18	3.1	5.0	10	11	23	17	8.6	11	.86	20	21	3.5
19	1.4	5.0	10	12	26	18	7.8	10	.56	139	67	1.6
20	.70	5.0	9.0	12	30	19	9.4	7.5	.56	42	183	1.0
21	10	5.0	9.0	12	32	17	13	4.7	1.0	32	89	.70
22	17	6.0	9.0	12	36	20	14	14	2.5	169	66	1.7
23	12	6.0	8.0	13	40	19	15	48	2.2	116	47	3.7
24	10	5.5	8.0	13	34	18	14	31	2.2	64	30	36
25	9.0	5.5	8.0	14	35	17	19	24	1.4	54	19	8.5
26	8.0	5.5	9.0	13	33	17	17	23	1.1	89	15	2.6
27	5.0	6.0	11	12	32	17	16	27	.80	82	12	3.4
28	4.0	7.0	10	12	37	19	16	25	.85	57	26	.98
29	5.0	7.0	10	12	---	18	14	23	.94	47	24	.35
30	4.0	6.5	11	11	---	15	10	13	.94	36	17	.15
31	5.0	---	11	11	---	14	---	9.1	---	44	11	---
TOTAL	157.20	163.0	260.0	357	573.0	669	387.9	457.8	146.53	1362.30	1332.6	148.65
MEAN	5.07	5.43	8.39	11.5	20.5	21.6	12.9	14.8	4.88	43.9	43.0	4.96
MAX	17	7.0	12	14	40	47	19	48	14	174	183	36
MIN	.25	4.5	5.5	10	8.0	14	7.8	4.7	.56	.00	9.6	.15
AC-FT	312	323	516	708	1140	1330	769	908	291	2700	2640	295

CAL YR 1980 TOTAL 14278.50 MEAN 39.0 MAX 463 MIN .25 AC-FT 28320
WTR YR 1981 TOTAL 6014.98 MEAN 16.5 MAX 183 MIN .00 AC-FT 11930

06447000 WHITE RIVER NEAR KADOKA, SD

LOCATION.--Lat 43°45'09", long 101°31'28", in SE¼SE¼ sec.30, T.3 S., R.22 E., Black Hills meridian, Jackson County, Hydrologic Unit 10140202, near center of span on downstream side of bridge on State Highway 73, 5.0 mi (8.0 km) upstream from Pass Creek, 5.5 mi (8.8 km) downstream from Cottonwood Creek, and 5.8 mi (9.3 km) south of Kadoka.

DRAINAGE AREA.--5,000 mi^2 (13,000 km^2), approximately.

PERIOD OF RECORD.--July 1942 to current year.

REVISED RECORDS.--WSP 1279: 1944(M), 1948.

GAGE.--Water-stage recorder. Datum of gage is 2,122.18 ft (646.840 m) National Geodetic Vertical Datum of 1929. Prior to June 14, 1949, nonrecording gage, and June 14, 1949, to Mar. 8, 1955, water-stage recorder at site 0.3 mi (0.5 km) downstream at same datum. Mar. 9, 1955, to May 17, 1957, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Some diversions above station for irrigation. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--39 years, 271 ft^3/s (7.675 m^3/s), 196,300 acre-ft/yr (242 hm^3/yr); median of yearly mean discharges, 250 ft^3/s (7.08 m^3/s), 181,000 acre-ft/yr (220 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 21,700 ft^3/s (615 m^3/s) June 7, 1951, gage height, 13.83 ft (4.215 m), site then in use, from rating curve extended above 16,000 ft^3/s (453 m^3/s); no flow at times in many years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of June 4, 1942, reached a stage of 16.24 ft (4.950 m) from floodmarks, discharge, about 32,000 ft^3/s (906 m^3/s), from rating curve extended above 16,000 ft^3/s (453 m^3/s). Floods of Mar. 8, 1905, and in spring of 1927 were 1 or 2 ft (0.3 or 0.6 m) higher than flood of June 4, 1942, from information by local residents.

EXTREMES FOR CURRENT YEAR.--Peak discharges above base of 3,600 ft^3/s (102 m^3/s) and maximum (*):

Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)	Date	Time	Discharge (ft^3/s)	(m^3/s)	Gage height (ft)	(m)
Oct. 17	0100	5290	150	9.60	2.926	Aug. 1	1030	5520	156	9.73	2.966
July 24	1300	*6580	186	*10.29	3.136	Aug. 5	1300	4880	138	9.36	2.853

No flow Oct. 1-15, Sept. 14-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	21	10	17	14	64	28	18	40	75	3700	13
2	.00	18	10	16	13	54	29	19	36	81	1350	11
3	.00	15	11	16	13	44	28	21	42	487	260	8.2
4	.00	13	11	17	14	44	30	23	118	300	1010	12
5	.00	13	13	17	16	44	30	48	68	240	3000	11
6	.00	12	14	17	16	38	29	44	45	170	1050	10
7	.00	11	13	17	13	38	27	75	40	89	1160	8.0
8	.00	11	12	16	11	41	22	67	34	57	807	6.6
9	.00	11	12	16	10	44	19	120	22	37	530	1.4
10	.00	11	13	15	9.0	40	16	450	33	30	256	2.4
11	.00	12	15	14	9.0	36	29	115	25	20	110	.70
12	.00	12	16	15	13	36	26	67	24	17	79	.42
13	.00	12	16	16	18	36	23	52	35	13	67	.20
14	.00	11	17	16	20	27	22	47	30	463	524	.00
15	.00	11	17	15	20	24	14	47	100	473	676	.00
16	1930	11	18	14	22	21	12	85	595	209	430	.00
17	3090	10	18	15	25	21	13	165	183	634	260	.00
18	1950	10	17	15	90	12	17	173	108	220	139	.00
19	1070	11	15	16	100	17	25	151	75	135	157	.00
20	370	15	13	17	110	21	28	331	57	123	115	.00
21	163	16	13	17	110	21	22	134	45	308	118	.00
22	97	15	12	17	105	21	47	83	35	268	110	.00
23	68	20	11	17	101	21	36	57	30	525	115	.00
24	45	22	11	18	95	29	28	67	25	4230	123	.00
25	34	25	13	19	70	37	15	77	22	1690	123	.00
26	29	22	15	18	62	29	12	55	21	770	110	.00
27	24	20	17	16	60	21	9.1	72	20	1180	70	.00
28	13	15	18	16	73	32	7.4	47	35	735	58	.00
29	14	12	18	15	---	44	21	60	45	375	52	.00
30	12	11	19	15	---	55	19	73	57	187	37	.00
31	12	---	18	15	---	37	---	55	---	240	22	---
TOTAL	8921.00	429	446	500	1232.0	1049	683.5	2898	2045	14381	16618	84.92
MEAN	288	14.3	14.4	16.1	44.0	33.8	22.8	93.5	68.2	464	536	2.83
MAX	3090	25	19	19	110	64	47	450	595	4230	3700	13
MIN	.00	10	10	14	9.0	12	7.4	18	20	13	22	.00
AC-FT	17690	851	885	992	2440	2080	1360	5750	4060	28520	32960	168

CAL YR 1980 TOTAL 47446.86 MEAN 130 MAX 3090 MIN .00 AC-FT 94110
WTR YR 1981 TOTAL 49287.42 MEAN 135 MAX 4230 MIN .00 AC-FT 97760

06447500 LITTLE WHITE RIVER NEAR MARTIN, SD

LOCATION.--Lat 43°10'00", long 101°37'47", in NW¼ sec.19, T.37 N., R.36 W., Bennett County, Hydrologic Unit 10140203, on right bank 70 ft (21 m) downstream from highway culvert and 5.4 mi (8.7 km) east of Martin.

DRAINAGE AREA.--310 mi² (803 km²), approximately, of which about 230 mi² (596 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year. Prior to October 1965, published as South Fork White River near Martin.

GAGE.--Water-stage recorder. Altitude of gage is 3,045 ft (928 m), by barometer. Prior to Aug. 14, 1938, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, and no gage-height record, Dec. 2 to Jan. 19, Feb. 2 to Mar. 17, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 18.9 ft³/s (0.535 m³/s), 13,690 acre-ft/yr (16.9 hm³/s); median of yearly mean discharges, 18 ft³/s (0.51 m³/s), 13,000 acre-ft/yr (16 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,190 ft³/s (33.7 m³/s) July 19, 1965, gage height, 12.90 ft (3.932 m), from rating curve extended above 340 ft³/s (9.63 m³/s) on basis of computation of peak flow through culvert and flow-over-road measurement of peak flow; maximum gage height, 13.21 ft (4.026 m) Mar. 11, 1966 (backwater from ice); minimum daily discharge, 0.6 ft³/s (0.017 m³/s) Aug. 14, 16, 18, 1940; no flow for part of each day Oct. 19, 20, 22, 1962, regulation caused by construction work above station.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of May 5, 1932, reached a stage of 13.3 ft (4.05 m), from floodmarks.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 26 ft³/s (0.74 m³/s) at 2115 hours, July 30, gage height, 2.63 ft (0.802 m), no peak above base of 100 ft³/s (2.83 m³/s); minimum daily discharge, 3.0 ft³/s (0.08 m³/s) June 30, July 1, 14.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	14	13	12	12	10	12	18	12	9.3	3.0	23	7.7
2	13	13	11	12	10	12	16	12	9.1	4.2	21	7.5
3	14	13	13	11	10	13	15	12	8.6	6.5	18	7.3
4	14	13	14	11	11	13	14	12	8.4	7.8	16	6.9
5	14	13	14	11	11	13	14	13	7.9	6.7	16	6.7
6	14	12	13	11	11	13	14	13	7.0	6.0	20	6.6
7	14	13	13	11	11	14	14	14	6.6	4.5	20	6.4
8	13	13	12	11	10	14	14	16	6.4	3.7	21	6.3
9	14	13	12	11	9.0	14	13	17	6.1	3.3	16	6.4
10	13	12	12	11	8.0	15	13	17	6.5	3.2	16	6.2
11	13	12	13	11	8.0	15	13	18	6.5	3.3	14	6.1
12	13	12	13	12	15	15	13	17	6.9	3.2	12	6.0
13	13	13	14	12	19	16	12	18	6.9	3.1	12	5.9
14	13	14	15	11	20	16	12	18	7.5	3.0	12	5.9
15	13	15	15	11	20	17	11	17	7.2	3.2	11	5.7
16	16	16	14	11	19	18	11	17	7.5	3.4	11	5.8
17	20	15	14	11	19	17	11	16	7.0	3.6	11	5.7
18	20	16	13	12	17	17	11	17	6.6	5.1	12	5.7
19	21	16	12	12	16	16	13	20	5.8	5.9	13	5.8
20	19	17	12	12	16	16	12	20	5.3	6.8	12	6.1
21	17	17	12	12	17	16	12	20	4.9	6.7	11	6.2
22	15	16	13	13	17	16	12	18	4.7	6.9	11	6.3
23	14	15	13	13	17	16	13	16	4.5	14	12	6.8
24	13	14	12	13	16	17	13	14	4.2	9.6	12	7.5
25	13	14	11	12	15	16	13	14	4.0	10	9.3	8.7
26	12	14	12	12	14	16	13	13	3.9	12	8.8	8.5
27	12	14	13	11	13	16	13	12	3.6	12	8.6	8.8
28	12	15	13	11	12	16	12	12	3.5	12	8.3	9.4
29	13	15	13	11	---	17	12	12	3.2	13	8.2	9.1
30	13	14	12	11	---	18	12	11	3.0	18	8.0	9.0
31	13	---	12	10	---	19	---	10	---	23	7.8	---
TOTAL	445	422	397	356	391.0	479	389	468	182.6	226.7	414.2	207.0
MEAN	14.4	14.1	12.8	11.5	14.0	15.5	13.0	15.1	6.09	7.31	13.4	6.90
MAX	21	17	15	13	20	19	18	20	9.3	23	23	9.4
MIN	12	12	11	10	8.0	12	11	10	3.0	3.0	7.8	5.7
AC-FT	883	837	787	706	776	950	772	928	362	450	822	411

CAL YR 1980 TOTAL 5091.8 MEAN 13.9 MAX 85 MIN 2.9 AC-FT 10100
WTR YR 1981 TOTAL 4377.5 MEAN 12.0 MAX 23 MIN 3.0 AC-FT 8680

06449000 LAKE CREEK BELOW REFUGE, NEAR TUTHILL, SD

LOCATION.--Lat 43°08'46", long 101°30'38", in SW¼ sec.30, T.37 N., R.35 W., Bennett County, Hydrologic Unit 10140203, on left bank 400 ft (122 m) downstream from east boundary of LaCreek game refuge, 1.2 mi (1.9 km) southwest of Tuthill and 5.5 mi (8.8 km) upstream from mouth.

DRAINAGE AREA.--120 mi² (311 km²), approximately, of which about 60 mi² (155 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--February 1938 to September 1940, July 1962 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 3,055 ft (931 m), by barometer. Prior to Aug. 4, 1938, nonrecording gage at same site and datum.

REMARKS.--Records fair. Flow regulated by series of lakes above gage. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--21 years, 15.5 ft³/s (0.439 m³/s), 11,230 acre-ft/yr (13.8 hm³/yr); median of yearly mean discharges, 16 ft³/s (0.45 m³/s), 11,600 acre-ft/yr (14 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 178 ft³/s (5.04 m³/s) June 18, 1967, gage height, 5.17 ft (1.576 m); maximum gage height, 5.67 ft (1.728 m) Mar. 28, 1975 (backwater from ice); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 74 ft³/s (2.10 m³/s) at 1800 hours, June 15, gage height, 3.29 ft (1.003 m); no flow for Oct. 17, 18, Nov. 9, 24-27.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.9	.09	.23	1.8	51	8.6	3.0	5.0	7.7	16	14	2.4
2	1.1	.11	.27	1.7	56	8.8	3.0	5.2	6.9	14	14	2.2
3	1.2	.06	.31	1.5	55	8.6	3.5	5.5	6.7	12	17	1.9
4	1.0	.03	.86	1.5	55	8.8	4.0	6.0	5.9	12	21	1.8
5	1.0	.02	1.5	1.6	55	9.1	4.0	6.0	8.2	11	21	1.7
6	.71	.03	1.6	1.7	55	9.3	4.0	6.0	5.3	10	20	1.3
7	1.1	.05	1.6	1.6	54	9.3	3.8	6.5	2.4	9.2	14	.93
8	1.0	.05	1.7	1.5	55	9.1	3.8	7.0	1.0	8.1	18	.75
9	.81	.00	1.8	1.5	55	9.3	3.8	7.0	1.3	8.5	18	.75
10	.40	.01	1.7	1.5	55	8.8	4.5	7.5	2.3	8.1	17	.65
11	.18	.01	1.7	1.5	55	8.4	5.0	8.0	4.0	7.8	16	.94
12	.15	.03	1.5	1.6	55	8.4	5.0	7.5	3.6	7.4	15	2.3
13	.11	.07	1.3	1.8	55	8.8	5.0	7.1	2.5	7.6	15	2.0
14	.12	.05	1.2	1.7	54	8.2	5.5	4.2	3.7	7.1	14	2.0
15	.04	.05	.93	1.8	53	6.9	5.7	4.4	39	6.9	13	1.9
16	.01	.05	.75	2.0	42	6.1	5.1	4.6	46	6.5	14	1.8
17	.00	.05	.70	2.3	33	5.5	5.1	4.2	10	6.6	13	1.8
18	.00	.05	.70	1.9	32	3.4	5.1	5.0	6.6	5.7	13	1.6
19	.10	.05	.75	2.0	31	2.9	5.5	6.3	3.7	5.0	13	1.5
20	.58	.05	.81	5.5	28	3.2	6.0	6.3	8.5	4.9	13	1.2
21	.11	.03	.81	13	19	3.2	6.0	6.7	.95	5.1	13	.67
22	.15	.02	.87	13	18	3.2	6.0	8.2	.27	5.1	12	.87
23	.12	.01	.87	13	18	3.2	5.8	13	4.5	5.3	12	.75
24	.11	.00	.81	12	17	3.1	5.5	11	6.7	5.3	12	.75
25	.12	.00	.87	12	17	3.1	5.5	11	3.5	5.5	12	.75
26	.11	.00	.92	19	17	3.1	5.5	12	3.7	5.5	10	.70
27	.08	.00	.93	35	12	3.1	5.5	11	6.8	8.2	7.1	.70
28	.01	.06	.75	39	8.6	3.0	5.3	9.7	5.9	14	6.9	.65
29	.01	.27	.81	44	---	3.0	5.0	9.5	8.0	14	6.5	.65
30	.04	.23	.60	45	---	3.0	5.0	8.8	16	15	6.3	.65
31	.07	---	1.1	45	---	3.0	---	8.6	---	13	5.7	---
TOTAL	12.49	1.53	31.25	328.0	1110.6	185.5	145.5	228.8	231.60	270.4	419.5	38.76
MEAN	.40	.051	1.01	10.6	39.7	5.98	4.85	7.38	7.72	8.72	13.5	1.29
MAX	1.9	.27	1.8	45	56	9.3	6.0	13	46	16	21	2.4
MIN	.00	.00	.23	1.5	8.6	2.9	3.0	4.2	.27	4.9	5.7	.65
AC-FT	25	3.0	62	651	2200	368	289	454	459	536	832	77

CAL YR 1980 TOTAL 4431.15 MEAN 12.1 MAX 103 MIN .00 AC-FT 8790
WTR YR 1981 TOTAL 3003.93 MEAN 8.23 MAX 56 MIN .00 AC-FT 5960

06449100 LITTLE WHITE RIVER NEAR VETAL, SD

LOCATION.--Lat 43°06'03", long 101°13'49", in NE¼NW¼ sec.17, T.36 N., R.33 W., Bennett County, Hydrologic Unit 10140203, on left bank 120 ft (37 m) downstream from highway bridge, 0.3 mi (0.5 km) downstream from small right-bank tributary, 10.8 mi (17.4 km) southeast of Vetal, and 15.3 mi (24.6 km) upstream from Spring Creek.

DRAINAGE AREA.--590 mi² (1,530 km²), approximately, of which about 415 mi² (1,075 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--August 1959 to current year. Prior to October 1965, published as South Fork White River near Vetal.

GAGE.--Water-stage recorder. Datum of gage is 2,780.69 ft (847.554 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 14, 1959, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Some small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--22 years, 52.3 ft³/s (1.481 m³/s), 37,890 acre-ft/yr (46.7 hm³/yr); median of yearly mean discharges, 51 ft³/s (1.44 m³/s), 36,900 acre-ft/yr (45 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,330 ft³/s (37.7 m³/s) Mar. 13, 1966, gage height, 7.75 ft (2.362 m); minimum daily, 9.0 ft³/s (0.25 m³/s) Dec. 24, 25, 1974.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 60 ft³/s (1.70 m³/s) at 0800 hours, Aug. 14, gage height, 4.08 ft (1.244 m); maximum gage height, 4.49 ft (1.369 m) Feb. 1 (backwater from ice); no peak above base of 150 ft³/s (4.25 m³/s); minimum daily discharge, 12 ft³/s (0.34 m³/s) Feb. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	22	32	25	20	16	27	27	31	37	23	35	29
2	23	32	20	20	15	27	27	32	38	32	32	28
3	23	32	20	19	15	28	26	33	37	32	31	28
4	23	32	25	18	16	28	26	34	36	27	33	27
5	23	32	25	18	17	29	27	33	35	25	36	26
6	23	32	25	19	17	30	27	32	33	24	36	27
7	23	32	24	19	16	31	26	33	35	24	37	26
8	23	31	23	19	15	31	25	34	31	22	37	24
9	23	30	23	18	14	32	26	33	30	21	37	25
10	24	31	21	18	13	33	25	32	29	21	37	26
11	25	31	22	19	12	34	26	32	30	21	37	25
12	25	30	22	20	13	34	25	32	27	21	36	24
13	25	30	24	19	25	34	25	34	24	21	41	22
14	25	30	25	18	35	34	24	33	32	22	52	23
15	27	31	25	17	40	35	25	33	29	24	45	22
16	33	31	25	18	40	40	26	34	27	30	46	23
17	33	31	24	19	39	38	26	35	36	30	42	23
18	31	31	23	19	39	37	26	37	29	28	39	23
19	34	32	21	19	35	38	32	36	25	26	37	22
20	35	30	20	19	33	38	30	39	24	24	36	22
21	35	30	21	17	34	37	28	40	23	23	42	21
22	33	31	22	18	35	37	28	40	23	27	43	21
23	33	33	21	19	37	36	29	40	21	29	42	22
24	32	31	19	20	36	36	28	42	21	30	42	21
25	31	27	18	20	33	36	28	42	21	28	43	21
26	30	25	20	19	30	37	30	42	22	28	43	21
27	31	25	21	19	28	38	30	42	23	28	41	20
28	31	27	22	18	27	33	29	47	24	28	37	20
29	32	27	22	17	---	31	30	41	24	31	37	20
30	33	25	22	17	---	30	31	39	20	32	34	20
31	32	---	21	16	---	28	---	37	---	33	30	---
TOTAL	876	904	691	575	725	1037	818	1124	846	815	1196	700
MEAN	28.3	30.1	22.3	18.5	25.9	33.5	27.3	36.3	28.2	26.3	38.6	23.3
MAX	35	33	25	20	40	40	32	47	38	33	52	29
MIN	22	25	18	16	12	27	24	31	20	21	30	20
AC-FT	1740	1790	1370	1140	1440	2060	1620	2230	1680	1620	2370	1390

CAL YR 1980 TOTAL 15087 MEAN 41.2 MAX 159 MIN 10 AC-FT 29930
WTR YR 1981 TOTAL 10307 MEAN 28.2 MAX 52 MIN 12 AC-FT 20440

06449400 ROSEBUD CREEK AT ROSEBUD, SD

LOCATION.--Lat 43°14'14", long 100°51'26", in SW¼SW¼NE¼ sec.27, T.38 N., R.30 W., Todd County, Hydrologic Unit 10140203, on left bank 40 ft (12 m) upstream from bridge on Spotted Tail Lane in town of Rosebud, 0.4 mi (0.6 km) downstream from small right bank tributary, and 1.0 mi (1.6 km) downstream from Spotted Tail Dam.

DRAINAGE AREA.--50.8 mi² (132 km²), approximately.

PERIOD OF RECORD.--October 1974 to current year.

GAGE.--Water-stage recorder. Datum of gage is 2,531.91 ft (771.726 m) National Geodetic Vertical Datum of 1929. October 1963 to September 1970, low-flow partial-record station 0.26 mi² (0.42 km²) upstream at different datum.

REMARKS.--Records poor. Flow regulated by Spotted Tail Dam and Indian Scout Lake, combined capacity, about 50 acre-ft (0.06 hm³), and some small diversions for irrigation of Spotted Tail Golf Course above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--7 years, 7.19 ft³/s (0.204 m³/s), 5,210 acre-ft/yr (6.42 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 643 ft³/s (18.2 m³/s) July 27, 1976, gage height, 10.34 ft (3.152 m); minimum daily, 0.02 ft³/s (0.001 m³/s) June 13, 1978.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 241 ft³/s (6.83 m³/s) at 0715 hours, Aug. 4, gage height, 7.64 ft (2.329 m); minimum daily, 2.0 ft³/s (0.057 m³/s) July 20.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.6	9.3	8.7	6.0	6.5	7.5	7.0	6.0	6.7	15	23	4.5
2	3.6	9.9	7.0	5.5	6.0	7.2	6.4	4.5	9.9	11	17	4.2
3	5.2	9.9	7.5	5.5	6.0	7.2	6.2	4.3	7.5	7.0	15	4.1
4	5.0	10	8.0	5.5	6.5	7.0	6.2	4.5	7.0	6.2	54	4.0
5	5.2	11	8.5	5.7	6.5	7.0	6.2	5.2	6.2	5.7	18	3.8
6	6.0	11	8.0	5.7	7.0	6.7	6.0	4.5	6.0	5.5	13	3.7
7	6.2	11	8.0	5.7	7.0	6.7	6.0	5.0	6.2	4.7	11	3.6
8	8.7	10	7.5	5.5	6.5	6.7	5.7	5.5	5.7	5.2	9.6	3.7
9	8.4	11	7.5	5.5	6.5	6.4	5.7	6.0	6.2	4.7	9.3	3.8
10	9.6	9.6	7.5	5.3	6.0	6.4	5.5	6.5	6.0	4.7	8.1	3.7
11	12	9.6	8.0	5.3	8.0	6.4	6.0	6.5	7.5	4.2	7.8	3.5
12	9.9	9.6	8.0	5.3	10	6.4	6.7	6.0	6.2	3.4	7.5	3.4
13	11	9.9	8.5	5.1	11	6.4	6.4	6.0	6.4	6.2	7.8	3.3
14	9.6	9.3	8.5	5.0	11	6.4	5.7	6.2	15	4.7	10	3.4
15	11	9.0	8.5	4.8	13	6.4	5.7	8.1	7.5	3.6	5.7	3.5
16	18	8.4	9.0	4.5	12	6.4	5.5	9.3	5.7	3.8	8.1	3.7
17	16	8.4	9.0	4.5	12	6.2	5.5	11	5.2	3.4	10	3.6
18	12	8.1	9.0	4.5	11	7.8	5.5	11	5.0	2.7	9.6	3.5
19	12	8.7	8.5	4.5	9.6	6.7	5.5	8.4	5.5	2.4	9.3	3.6
20	11	7.8	8.0	4.7	9.3	7.5	5.5	8.1	5.7	2.0	8.4	3.8
21	15	7.8	7.0	4.7	8.7	8.7	5.5	8.4	6.2	2.4	9.3	4.0
22	13	8.4	6.5	5.0	8.1	7.8	5.5	9.9	5.7	2.5	9.0	4.2
23	10	7.8	6.5	5.5	8.4	7.0	5.2	9.6	5.7	2.7	9.9	4.5
24	12	7.5	6.5	6.0	7.8	6.7	5.0	9.6	5.5	9.0	11	5.0
25	13	7.8	6.0	7.0	7.2	6.7	4.7	8.7	5.5	15	11	5.5
26	12	7.5	6.0	7.5	7.2	6.7	4.5	8.7	6.2	16	8.4	5.3
27	13	7.8	6.5	7.5	7.5	6.4	4.3	12	9.9	16	9.0	5.3
28	14	8.4	7.0	7.0	7.2	6.2	4.5	11	6.7	16	8.4	5.5
29	12	9.0	7.0	7.0	---	7.0	5.2	8.1	6.0	16	8.1	5.5
30	10	10	6.5	6.5	---	7.8	7.5	6.7	6.0	18	7.8	6.0
31	9.6	---	6.5	6.5	---	7.5	---	6.4	---	18	6.0	---
TOTAL	317.6	273.5	235.2	174.3	233.5	213.9	170.8	231.7	200.5	237.7	360.1	125.2
MEAN	10.2	9.12	7.59	5.62	8.34	6.90	5.69	7.47	6.68	7.67	11.6	4.17
MAX	18	11	9.0	7.5	13	8.7	7.5	12	15	18	54	6.0
MIN	3.6	7.5	6.0	4.5	6.0	6.2	4.3	4.3	5.0	2.0	5.7	3.3
AC-FT	630	542	467	346	463	424	339	460	398	471	714	248

CAL YR 1980 TOTAL 2577.5 MEAN 7.04 MAX 18 MIN 3.1 AC-FT 5110
WTR YR 1981 TOTAL 2774.0 MEAN 7.60 MAX 54 MIN 2.0 AC-FT 5500

06449500 LITTLE WHITE RIVER NEAR ROSEBUD, SD

LOCATION.--Lat 43°19'32", long 100°53'00", in SW¼NW¼ sec.28, T.39 N., R.30 W., Todd County, Hydrologic Unit 10140203, on left bank at downstream side of bridge on U.S. Highway 18, 0.3 mi (0.5 km) downstream from Scabby Creek, 0.7 mi (1.1 km) downstream from Soldier Creek, and 6.4 mi (10.3 km) north of Rosebud.

DRAINAGE AREA.--1,020 mi² (2,640 km²), approximately, of which about 760 mi² (1,970 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--May 1943 to current year. Prior to October 1965, published as South Fork White River near Rosebud.

REVISED RECORDS.--WSP 1056: 1943, drainage area. WSP 1309: 1946(M).

GAGE.--Water-stage recorder. Datum of gage is 2,294.99 ft (699.513 m) National Geodetic Vertical Datum of 1929. Prior to May 11, 1948, nonrecording gage at same site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Some small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--38 years, 110 ft³/s (3.115 m³/s), 79,700 acre-ft/yr (98.3 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,640 ft³/s (131 m³/s) June 11, 1967, gage height, 14.09 ft (4.295 m), from rating curve extended above 1,300 ft³/s (36.8 m³/s); minimum daily, 10 ft³/s (0.28 m³/s) Jan. 4, 1949, Feb. 20, 1955.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 368 ft³/s (10.4 m³/s) at 1000 hours, Aug. 4, gage height, 5.60 ft (1.707 m), no other peak above base of 330 ft³/s (9.34 m³/s); maximum gage height, 7.30 ft (2.225 m) Dec. 22 (backwater from ice); minimum daily discharge, 55 ft³/s (1.56 m³/s) July 6.

CORRECTIONS.--Corrections for 1980 water year report: EXTREMES FOR PERIOD OF RECORD is in error and should be EXTREMES FOR CURRENT YEAR. EXTREMES FOR PERIOD OF RECORD was omitted and should be the same as this report.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	86	98	75	75	65	82	88	86	106	57	118	93
2	81	86	70	75	65	79	98	79	91	93	110	71
3	68	78	75	70	65	79	88	88	71	67	116	95
4	74	86	86	70	70	77	84	93	91	58	262	
5	62	95	81	70	70	77	81	97	76	67	178	
6	62	74	73	75	65	78	93	89	73	55	146	89
7	81	98	70	75	65	79	86	97	82	58	118	84
8	74	70	70	75	60	82	89	93	76	58	129	89
9	78	78	70	70	60	85	95	86	81	57	144	76
10	68	65	75	70	60	86	100	84	88	60	126	78
11	71	70	75	70	60	86	91	81	76	60	114	74
12	74	81	80	75	65	86	81	93	78	58	106	76
13	70	93	80	75	75	86	93	88	71	60	108	79
14	65	84	85	75	90	88	82	84	112	68	118	73
15	78	76	85	70	110	89	84	79	79	67	126	76
16	104	64	85	65	130	104	78	86	65	68	118	68
17	88	68	80	65	140	95	74	98	67	71	102	64
18	98	79	80	65	145	88	82	91	76	73	114	76
19	88	93	75	70	140	97	108	86	78	75	108	82
20	84	76	75	70	135	104	91	91	84	78	98	88
21	86	71	75	68	135	95	86	97	84	81	93	78
22	91	68	75	70	130	118	82	104	86	86	112	86
23	86	86	75	75	109	95	89	112	68	93	104	104
24	81	97	70	80	111	97	79	95	70	91	110	108
25	86	79	65	80	113	93	82	102	71	104	110	86
26	88	84	70	75	111	95	71	98	71	73	95	91
27	86	76	70	75	105	97	73	133	73	82	84	81
28	91	93	75	70	88	98	78	158	88	89	79	84
29	88	86	75	70	---	135	81	129	65	81	88	95
30	95	79	80	70	---	100	91	124	60	106	91	89
31	88	---	80	65	---	91	---	100	---	112	98	---
TOTAL	2520	2431	2355	2223	2637	2841	2578	3021	2357	2306	3623	2496
MEAN	81.3	81.0	76.0	71.7	94.2	91.6	85.9	97.5	78.6	74.4	117	83.2
MAX	104	98	86	80	145	135	108	158	112	112	262	108
MIN	62	64	65	65	60	77	71	79	60	55	79	64
AC-FT	5000	4820	4670	4410	5230	5640	5110	5990	4680	4570	7190	4950

CAL YR 1980 TOTAL 32333 MEAN 88.3 MAX 246 MIN 30 AC-FT 64130
WTR YR 1981 TOTAL 31388 MEAN 86.0 MAX 262 MIN 55 AC-FT 62260

06450500 LITTLE WHITE RIVER BELOW WHITE RIVER, SD

LOCATION.--Lat 43°36'04", long 100°44'52", in SW¼NW¼ sec.23, T.42 N., R.29 W., Mellette County, Hydrologic Unit 10140203, on left bank at downstream side of bridge on U.S. Highway 83, 1.3 mi (2.1 km) downstream from Pine Creek and 2.0 mi (3.2 km) north of town of White River.

DRAINAGE AREA.--1,570 mi² (4,070 km²), approximately, of which about 1,310 mi² (3,390 km²) probably contributes directly to surface runoff.

PERIOD OF RECORD.--October 1949 to current year. Prior to October 1965, published as South Fork White River below White River.

GAGE.--Water-stage recorder. Datum of gage is 1,912.78 ft (583.015 m) National Geodetic Vertical Datum of 1929. Prior to June 8, 1968, at site 0.8 mi (1.3 km) downstream at datum 4.50 ft (1.372 m) lower.

REMARKS.--Records good except those for winter periods, which are poor. Diurnal fluctuations caused by small powerplant 2.2 mi (3.5 km) upstream. Several small diversions for irrigation and some storage in several small lakes above station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--32 years, 127 ft³/s (3.597 m³/s), 92,010 acre-ft/yr (113 hm³/yr); median of yearly mean discharges, 120 ft³/s (3.40 m³/s), 86,900 acre-ft/yr (110 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 13,700 ft³/s (388 m³/s) June 12, 1967, gage height, 10.02 ft (3.054 m), site and datum then in use; maximum gage height, 11.21 ft (3.417 m) June 7, 1968, site and datum then in use; maximum gage height at present site and datum, 15.46 ft (4.712 m) June 7, 1968, from floodmarks; no flow for parts of several days in 1952, 1954, 1956; minimum daily discharge, 7 ft³/s (0.20 m³/s) July 31, Aug. 31, Sept. 1, 1952.

EXTREMES FOR CURRENT YEAR.--Maximum discharge: 210 ft³/s (5.95 m³/s) at 1030 hours, May 30, gage height, 3.76 ft (1.146 m); maximum gage height, 5.72 ft (1.743 m) Feb. 21 (backwater from ice); minimum daily discharge, 26 ft³/s (0.74 m³/s) Aug. 15.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	66	66	85	80	70	75	104	66	104	46	51	59
2	79	85	69	80	65	96	85	56	126	96	89	56
3	63	96	65	75	65	79	79	72	115	179	51	59
4	66	89	59	75	65	85	79	100	107	104	115	66
5	51	82	107	70	70	82	104	85	82	96	192	63
6	104	104	96	70	70	85	59	82	92	82	154	53
7	69	107	95	70	70	69	69	66	85	66	82	107
8	92	104	90	75	70	79	79	85	92	53	69	72
9	89	92	90	75	65	82	75	72	92	39	43	69
10	72	100	95	75	60	82	69	72	89	36	39	72
11	85	126	100	70	60	79	69	53	85	51	29	63
12	107	126	100	70	62	89	107	69	100	69	29	63
13	100	130	95	75	70	85	72	56	79	41	31	53
14	118	130	100	75	80	79	66	59	107	41	29	96
15	118	134	100	75	90	89	59	41	107	53	26	43
16	138	122	95	70	110	72	66	51	104	53	88	69
17	158	118	90	65	140	89	69	104	75	72	43	72
18	138	111	85	65	160	56	59	95	63	79	46	69
19	130	111	80	70	170	79	69	85	92	72	41	72
20	92	122	80	75	170	89	126	72	69	48	39	68
21	89	134	80	78	160	79	92	69	138	72	39	63
22	111	130	85	65	150	66	75	75	36	79	41	66
23	89	146	80	65	122	79	79	82	51	69	63	56
24	59	92	75	85	46	100	69	89	51	69	53	118
25	53	107	70	80	41	104	63	96	39	72	85	92
26	48	100	65	80	72	92	85	89	43	158	66	89
27	92	100	65	80	69	85	79	122	39	138	66	89
28	90	75	70	75	69	100	75	168	85	89	89	72
29	79	82	75	75	---	134	66	126	92	63	72	69
30	85	85	75	75	---	118	59	171	46	59	39	66
31	56	---	80	70	---	85	---	118	---	63	66	---
TOTAL	2786	3206	2596	2323	2511	2662	2306	2666	2485	2307	1925	2124
MEAN	89.9	107	83.7	74.9	89.7	85.9	76.9	86.0	82.8	74.4	62.1	70.8
MAX	158	146	107	85	170	134	126	188	138	179	192	118
MIN	48	66	59	65	41	56	59	41	36	36	26	43
AC-FT	5530	6360	5150	4610	4980	5280	4570	5290	4930	4580	3820	4210

CAL YR 1980 TOTAL 37811 MEAN 103 MAX 717 MIN 25 AC-FT 75000
WTR YR 1981 TOTAL 29897 MEAN 81.9 MAX 192 MIN 26 AC-FT 59300

06452000 WHITE RIVER NEAR OACOMA, SD

LOCATION.--Lat 43°44'54", long 99°33'22", in SE¼SW¼ sec.3, T.103 N., R.73 W., Lyman County, Hydrologic Unit 10140204, on left bank at downstream side of bridge on State Highway 47, 1.5 mi (2.4 km) downstream from Wagner Draw, 1.8 mi (2.9 km) upstream from high-water line of Lake Francis Case, and 8.8 mi (14.2 km) southwest of Oacoma.

DRAINAGE AREA.--10,200 mi^2 (26,400 km^2), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to current year.

REVISED RECORDS.--WSP 786: Drainage area. WSP 1309: 1929-30(M).

GAGE.--Water-stage recorder. Datum of gage is 1,377.29 ft (419.798 m) National Geodetic Vertical Datum of 1929. See WSP 1709, 1729, or 1917 for history of changes prior to Feb. 27, 1960.

REMARKS.--Records good except those for winter periods, which are poor. Some diversions for irrigation above station. Gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years, 519 ft^3/s (14.70 m^3/s), 376,000 acre-ft/yr (464 hm^3/yr); median of yearly mean discharges, 440 ft^3/s (12.5 m^3/s), 319,000 acre-ft/yr (390 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 51,900 ft^3/s (1,470 m^3/s) Mar. 30, 1952, gage height, 15.40 ft (4.694 m), site and datum then in use; maximum gage height, 23.59 ft (7.190 m) Mar. 14, 1978, ice jam; no flow Aug. 14-28, 1971, July 16-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976, July 23 to Aug. 7, 1980.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 5,800 ft^3/s (164 m^3/s) at 0730 hours, Aug. 8, gage height, 7.83 ft (2.387 m), no other peak above base of 5,500 ft^3/s (156 m^3/s); minimum daily discharge, 15 ft^3/s (0.42 m^3/s) Oct. 4, 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	20	116	50	95	80	400	246	79	183	34	840	141
2	18	105	35	90	75	380	192	74	222	139	575	112
3	16	97	32	90	70	295	205	72	192	118	436	88
4	15	90	35	95	70	272	165	69	132	43	3480	83
5	17	88	45	95	75	268	157	73	125	34	1430	74
6	19	86	50	95	75	261	149	73	120	173	770	66
7	23	81	48	90	70	246	132	76	100	654	842	58
8	26	76	45	90	65	240	122	81	84	532	4520	55
9	24	76	45	90	60	236	116	71	105	250	1790	48
10	20	76	50	85	50	225	111	66	147	160	1340	44
11	15	71	60	80	50	208	103	61	125	125	1180	44
12	16	69	65	85	60	199	102	120	116	90	762	43
13	18	69	65	90	90	195	101	295	109	59	600	40
14	19	78	65	90	100	195	95	405	199	40	569	37
15	22	74	70	85	100	185	95	295	132	33	385	36
16	49	74	70	80	105	177	86	239	111	29	288	35
17	289	73	70	85	110	174	79	229	195	20	225	35
18	1270	69	65	90	115	165	73	205	754	460	686	37
19	1880	79	55	95	120	154	71	166	581	515	732	43
20	1800	76	50	95	120	152	69	162	521	561	475	42
21	1880	71	50	100	115	152	71	162	356	742	420	41
22	1200	70	50	95	110	148	69	157	232	442	276	39
23	718	70	45	100	105	144	79	227	171	333	240	36
24	442	65	45	100	100	141	84	395	152	339	279	35
25	299	65	60	95	100	136	84	320	120	457	222	35
26	258	65	80	90	150	125	88	247	84	2260	177	38
27	216	70	90	90	400	118	91	205	73	3280	165	36
28	174	70	100	80	500	134	105	222	58	1850	136	39
29	158	70	105	80	---	178	95	199	45	1260	100	39
30	136	65	100	85	---	218	84	183	32	1200	120	34
31	125	---	95	85	---	292	---	250	---	1600	157	---
TOTAL	11182	2304	1890	2790	3240	6413	3319	5498	5576	17832	24177	1533
MEAN	361	76.8	61.0	90.0	116	207	111	177	186	575	780	51.1
MAX	1880	116	105	100	500	400	246	405	754	3280	4520	141
MIN	15	65	32	80	50	118	69	61	32	20	100	34
AC-FT	22180	4570	3750	5530	6430	12720	6580	10910	11060	35370	47960	3040

CAL YR 1980 TOTAL 75711.40 MEAN 207 MAX 1880 MIN .00 AC-FT 150200
WTR YR 1981 TOTAL 85754.00 MEAN 235 MAX 4520 MIN 15 AC-FT 170100

06452000 WHITE RIVER NEAR OACOMA, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1946-53, 1969, 1972 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1976, October 1977 to current year.
WATER TEMPERATURES: October 1974 to September 1976, October 1978 to current year.
SUSPENDED SEDIMENT DISCHARGE: October 1971 to September 1976 (discontinued).

REMARKS.--No flow July 25 to August 7.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,950 micromhos Aug. 8, 1980; minimum daily, 370 micromhos Mar. 17, 1975.
WATER TEMPERATURES: Maximum daily, 30.0°C July 30, 1975, July 10, 1976, July 10, 1980; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 72,300 mg/L Apr. 15, 1974; minimum daily mean, 0 mg/L July 17-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976.
SEDIMENT LOADS: Maximum daily, 1,220,000 tons (1,110,000 tonnes) May 29, 1973; 0 ton (0 tonne) July 17-23, 1974, Aug. 29 to Sept. 9, Sept. 13, 1976.

EXTREMES FOR CURRENT YEAR.--
WATER TEMPERATURES: Maximum daily, 26.0 July 6, Aug. 1, 3; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
OCT										
02...	1305	20	509	8.3	11.5	8.8	9.9	K51	K34	--
DEC										
03...	1215	31	563	8.1	.1	200	12.4	K35	K75	110
18...	1100	63	860	8.0	.8	160	9.2	K12	130	160
JAN										
22...	1250	95	815	8.0	.5	440	11.3	K20	120	79
FEB										
17...	1200	109	828	8.2	.4	74	11.1	K2	K53	130
MAR										
20...	1155	146	850	8.5	3.8	140	11.4	ND	K38	130
APR										
17...	1235	78	895	8.4	18.2	270	9.2	ND	136	120
MAY										
15...	1200	299	603	8.7	14.7	160	8.8	K27	K24	87
JUN										
11...	1300	126	638	8.4	19.5	.90	--	K45	K23	94
JUL										
09...	1200	252	498	8.4	19.2	21000	7.5	K6700	K6700	11
AUG										
06...	1145	775	448	8.1	24.2	3600	6.6	K3270	K6200	21
SEP										
03...	1400	95	859	8.4	17.7	4800	8.5	K800	K500	43

K Non-ideal colony count.
ND Not detected.

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT										
02...	--	--	--	--	--	--	--	--	--	--
DEC										
03...	0	37	4.7	90	62	3.7	7.5	80	210	13
18...	0	49	8.5	93	55	3.2	6.0	150	170	17
JAN										
22...	0	27	2.9	71	64	3.5	4.8	55	160	4.6
FEB										
17...	0	44	6.0	59	48	2.2	4.7	80	170	9.0
MAR										
20...	0	42	5.2	63	51	2.4	5.1	80	170	6.4
APR										
17...	0	40	5.5	70	54	2.8	7.3	84	190	6.2
MAY										
15...	0	16	1.8	120	62	7.6	6.4	110	190	7.3
JUN										
11...	0	19	1.6	110	79	6.5	8.2	110	180	6.2
JUL										
09...	0	4.1	.2	110	94	14	4.1	59	190	4.1
AUG										
06...	0	7.6	.5	95	69	9.2	4.1	80	150	5.5
SEP										
03...	0	15	1.3	100	81	6.8	5.3	60	180	18

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)
OCT										
02...	--	--	--	--	--	--	--	.00	.00	.000
DEC										
03...	.6	43	398	408	.54	33.3	--	1.4	1.3	.000
18...	.4	37	486	468	.66	82.7	256	1.1	1.0	.220
JAN										
22...	.4	39	273	306	.37	70.1	--	.92	1.0	.150
FEB										
17...	.4	45	351	354	.48	103	95	.91	.01	.160
MAR										
20...	.4	41	352	346	.48	139	76	.22	.26	.060
APR										
17...	.5	43	370	373	.50	78.4	--	.01	.01	.090
MAY										
15...	.6	26	422	408	.57	341	600	.90	.58	.140
JUN										
11...	.6	36	445	405	.61	151	2560	.71	.73	.080
JUL										
09...	1.0	33	339	340	.46	231	--	2.2	2.1	.090
AUG										
06...	.6	28	307	318	.42	642	25200	1.4	1.3	.040
SEP										
03...	.5	39	529	347	.72	136	132	.01	.01	.030

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
OCT										
02...	.00	.030	.40	1.2	.40	.80	1.20	.80	1.2	5.3
DEC										
03...	.00	.000	1.9	1.7	1.9	.00	1.70	3.3	3.0	13
18...	.28	.010	.20	.56	.42	.15	.57	1.5	1.6	7.0
JAN										
22...	.19	.060	2.5	.71	2.6	.00	.77	3.5	1.8	7.8
FEB										
17...	.21	.080	.79	1.1	.95	.15	1.10	1.9	1.9	8.5
MAR										
20...	.08	.080	.59	.88	.65	.31	.96	.87	1.2	5.3
APR										
17...	.12	.080	.67	1.2	.76	.54	1.30	.77	1.3	5.8
MAY										
15...	.18	.100	.84	9.9	.98	9.0	10.0	1.9	11	47
JUN										
11...	.10	.090	3.3	6.2	3.4	2.9	6.30	4.1	7.0	31
JUL										
09...	.12	.060	.91	12	1.0	11	12.0	3.2	14	62
AUG										
06...	.05	.050	4.6	15	4.6	10	15.0	6.0	16	72
SEP										
03...	.04	.060	1.4	12	1.4	11	12.0	1.8	12	53

DATE	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
OCT									
02...	--	.010	.060	.18	--	24	1.4	--	--
DEC									
03...	--	.110	.360	1.1	--	--	--	10	2000
18...	.060	.090	.270	.83	.18	--	--	9.1	--
JAN									
22...	--	.110	.040	.12	--	19	3.4	--	--
FEB									
17...	.080	.070	.130	.40	--	--	--	6.0	--
MAR									
20...	.060	.070	.310	.95	--	--	--	7.5	47000
APR									
17...	--	.030	.420	1.3	--	7.6	2.0	--	--
MAY									
15...	.080	.070	15.0	46	--	--	--	93	--
JUN									
11...	.230	.210	1.60	4.9	--	--	--	30	1700
JUL									
09...	--	.100	1.10	3.4	--	--	--	24	--
AUG									
06...	.090	.370	16.0	49	--	--	--	72	--
SEP									
03...	.460	.230	8.60	26	--	--	--	65	--

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
02...	1305	20	329	18	--	67	84		95	--	--	--
DEC												
03...	1215	31	--	--	--	--	--	--	--	--	--	--
18...	1100	63	1280	218	--	68	80	87	97	98	99	100
JAN												
22...	1250	95	951	244	--	63	91	99	100	--	--	--
FEB												
17...	1200	109	141	41	--	--	--	--	--	--	--	--
MAR												
20...	1155	146	813	320	--	58	60	65	75	79	84	100
APR												
17...	1235	78	623	132	--	64	93	98	100	--	--	--
MAY												
15...	1200	299	37500	30300	100	77	90	100	--	--	--	--
JUN												
11...	1300	126	18500	6290	100	86	92	100	--	--	--	--
JUL												
09...	1200	252	--	--	--	--	--	--	--	--	--	--
AUG												
06...	1145	775	45300	94800	100	79	--	99	100	--	--	--
SEP												
03...	1400	95	15800	4050	100	97	99	100	--	--	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT											
02...	1305	--	--	--	0	--	--	10	--	--	0
JAN											
22...	1250	12	1	11	1	--	<1	0	0	0	3
APR											
17...	1235	11	3	8	0	0	2	40	30	10	5
JUL											
09...	1200	160	110	53	3	2	1	140	130	10	55

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT											
02...	--	--	8	--	--	2200	--	3	--	--	120
JAN											
22...	--	<3	17	0	18	7700	450	15	3	12	170
APR											
17...	--	<3	24	8	16	7000	70	7	7	0	260
JUL											
09...	55	0	190	180	6	120000	110	340	340	3	7300

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
02...	--	--	--	--	--	--	--	--	80	--	--
JAN											
22...	130	40	.4	.0	.7	2	0	2	60	20	40
APR											
17...	250	10	.6	.3	.3	1	0	1	50	40	8
JUL											
09...	7300	0	1.1	.8	.3	1	0	4	430	410	20

< Less than.

WHITE RIVER BASIN

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	DEC 3,80	MAR 20,81	JUN 11,81
TIME	1215	1155	1300
TOTAL CELLS/ML	2000	47000	1700
DIVERSITY: DIVISION	1.4	1.1	1.4
.CLASS	1.4	1.1	1.4
..ORDER	2.2	1.5	1.7
...FAMILY	2.2	1.5	2.2
....GENUS	2.2	1.8	3.1

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	1400	3	27	2
....DICTYOSPHAERIUM	--	-	2100	4	--	-
....KIRCHNERIELLA	--	-	340	1	--	-
....SELENASTRUM	--	-	2700	6	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	--	-	220	13
....CRUCIGENIA	--	-	--	-	300#	18
....SCENEDESMUS	270	14	--	-	330#	19
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	340#	17	--	-	27	2
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	69	3	32000#	68	55	3
..PENNALES						
...FRAGILARIACEAE						
....SYNEDRA	--	-	--	-	27	2
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	690	1	--	-
...NAVICULACEAE						
....CALONEIS	--	-	--	-	27	2
....NAVICULA	--	-	340	1	110	6
....PINNULARIA	--	-	--	-	27	2
...NITZSCHIACEAE						
....NITZSCHIA	210	10	690	1	300#	18
...SURIRELLACEAE						
....SURIRELLA	--	-	--	-	27	2
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	210	10	4100	9	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....LYNGBYA	--	-	--	-	220	13
....PHORMIDIUM	890#	45	2700	6	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	500	450	660	---	---	---	930	610	530	460	510	430
2	539	---	520	640	450	---	760	540	420	460	---	450
3	500	440	565	830	490	---	600	---	465	520	500	459
4	515	440	570	---	530	---	580	510	460	510	510	470
5	---	425	550	760	550	---	---	510	510	---	580	570
6	545	440	500	600	550	---	570	510	490	480	440	---
7	510	445	---	650	590	---	580	510	---	600	480	---
8	495	445	670	650	---	---	600	480	545	560	580	570
9	490	---	770	520	750	---	550	455	550	498	---	570
10	520	445	830	540	720	---	520	---	555	500	490	610
11	520	460	830	---	700	---	520	485	630	570	490	600
12	---	450	800	480	830	---	---	560	620	---	480	600
13	490	460	320	480	850	---	520	550	490	600	480	---
14	500	445	---	480	290	---	530	680	---	610	480	560
15	530	445	580	460	---	---	600	603	490	620	460	580
16	680	---	460	470	---	---	530	545	500	630	---	570
17	660	445	680	470	428	---	495	---	500	600	460	570
18	500	460	880	---	---	---	525	545	660	630	580	570
19	---	455	580	430	---	---	---	545	560	---	520	570
20	470	440	700	410	---	450	530	530	550	610	550	---
21	460	470	---	430	---	510	530	540	---	550	540	530
22	450	460	600	415	---	---	530	520	550	560	480	530
23	450	---	570	430	---	500	520	550	520	490	---	540
24	440	535	590	430	---	480	500	---	550	480	460	510
25	455	545	---	---	---	470	560	---	520	630	450	480
26	---	575	810	---	---	480	---	555	530	---	480	480
27	430	---	790	400	---	470	560	560	530	630	490	---
28	460	630	---	410	---	510	625	510	---	590	470	450
29	445	540	690	390	---	---	630	520	540	520	450	450
30	480	---	610	380	---	940	600	540	610	540	---	460
31	460	---	620	400	---	950	---	---	---	530	450	---
MEAN	499	474	644	504	594	576	577	539	534	563	495	526

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1960 TO SEPTEMBER 1961
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	6.0	1.0	---	---	---	9.0	12.0	20.0	22.0	26.0	14.0
2	11.5	---	1.0	1.0	.0	.0	9.0	13.0	20.0	21.0	---	14.0
3	11.0	9.0	.0	1.0	.0	.0	8.0	---	18.0	20.0	26.0	17.5
4	12.0	7.0	.0	---	.0	1.0	6.0	10.0	20.0	21.0	24.0	17.0
5	---	7.0	.0	.0	.0	1.0	---	11.0	21.0	---	22.0	16.0
6	14.0	8.0	.0	1.0	.0	.0	7.0	11.0	20.0	26.0	24.0	---
7	14.0	7.0	---	1.0	.0	.0	9.0	10.0	---	22.0	21.0	---
8	15.0	8.0	1.0	.0	---	---	10.0	9.0	20.0	22.0	23.0	14.0
9	14.0	---	.0	.0	.0	.0	10.0	9.0	18.0	19.0	---	17.0
10	12.0	4.0	.0	.0	.0	1.0	10.0	---	18.0	22.0	20.0	21.0
11	6.0	3.0	.0	---	.0	1.0	9.0	9.0	19.5	23.0	20.0	19.0
12	---	6.0	1.0	.0	.0	1.0	---	8.0	21.0	---	21.0	16.0
13	8.0	4.0	.0	.0	.0	1.0	9.0	9.0	21.0	25.0	22.0	---
14	9.0	3.0	---	.0	.0	1.0	8.0	11.0	---	25.0	24.0	17.0
15	8.0	1.0	.0	.0	---	---	9.0	14.5	17.0	24.0	23.0	15.0
16	7.0	---	1.0	.0	1.0	3.0	10.0	13.0	13.0	24.0	---	13.0
17	7.0	3.0	1.0	.0	.5	5.0	18.0	---	17.0	23.0	20.0	14.0
18	6.0	1.0	1.0	---	1.0	.0	14.0	10.0	17.0	24.0	20.0	14.0
19	---	2.0	.0	.0	1.0	1.0	---	10.0	18.0	---	21.0	12.0
20	7.0	2.0	.0	.0	1.0	4.0	11.0	15.0	18.0	23.0	22.0	---
21	9.0	1.0	---	.0	1.0	3.0	13.0	16.0	---	21.0	25.0	15.0
22	9.0	3.0	.0	.5	---	---	12.0	16.0	17.0	22.0	24.0	17.0
23	7.0	---	.0	1.0	1.0	4.0	14.0	15.0	21.0	23.0	---	16.0
24	4.0	1.0	.0	.0	1.0	10.0	12.0	---	21.0	22.0	21.0	14.0
25	3.0	1.0	---	---	2.0	9.0	16.0	---	21.0	21.0	20.0	14.0
26	---	1.0	.0	1.0	2.0	7.0	---	14.0	19.0	---	21.0	13.0
27	1.0	---	.0	1.0	1.0	6.0	19.0	16.0	23.0	19.0	20.0	---
28	1.0	1.0	---	.0	1.0	9.0	17.0	17.0	---	19.0	20.0	14.0
29	3.0	1.0	1.0	1.0	---	---	14.0	17.0	19.0	19.0	21.0	15.0
30	9.0	---	1.0	.0	---	8.0	15.0	17.0	22.0	23.0	---	13.0
31	5.0	---	1.0	.0	---	7.0	---	---	---	25.0	20.0	---
MEAN	8.5	4.0	.5	.5	.5	3.0	11.5	12.5	19.0	22.0	22.0	15.5

06452000 WHITE RIVER NEAR OACOMA, SD--Continued

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          INITIAL DATE                          81/05/15  81/05/15  81/07/09  81/07/09
          INITIAL TIME-DEPTH-BOTTOM             1150 0000 1200 0001 1200 0001 1240 0000
          FINAL DATE                                      81/05/15  81/07/09
          FINAL TIME-NUMBER OF SAMPLES                    1215 6    1210 6
          CP-SPACE OR TIME-STATISTICAL FUNC               CP-S      CP-S
00010  WATER      TEMP       CENT         14.7                                19.2
00011  WATER      TEMP       FAHN         58.5                                66.6
00020   AIR       TEMP       CENT                                             26.5
00032  CLOUD     COVER     PERCENT                                               0
00035   WIND    VELOCITY     MPH                                               5.0
00036   WIND    DIR.FROM   NORTH-0                                             315
00061  STREAM     FLOW,    INST-CFS        299                                 252
00065  STREAM     STAGE      FEET         4.15                              422.00
00094 CNDUCTVY  FIELD      MICROMHO        603                                 498
00299    DO       PROBE      MG/L          8.8                                 7.5
00301    DO       SATUR    PERCENT        86.3                                79.8
00400    PH                   SU          8.70                                8.40
00720 CYANIDE     CN-TOT     MG/L                   0.000     0.000
31616 FEC COLI  MFM-FCBR    /100ML          27
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Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD

LOCATION.--Lat 43°04'05", long 98°33'15", in SE¼ sec.5, T.95 N., R.65 W., Charles Mix County, Hydrologic Unit 10140101, in tower 6 of outlet works at Fort Randall Dam, on Missouri River at Pickstown, 1.0 mi (1.6 km) upstream from Randall Creek, and at mile 880.0 (1,415.9 km).

DRAINAGE AREA.--263,500 mi² (682,500 km²), approximately.

STAGE-CONTENTS RECORDS

PERIOD OF RECORD.--December 1952 to current year (monthend contents only). Prior to October 1964, published as Fort Randall Reservoir at Pickstown.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Mar. 25, 1953, elevations determined from temporary nonrecording gages.

REMARKS.--Reservoir is formed by earthfill dam; storage began in December 1952; initial closure made July 1952. Maximum capacity, 5,603,000 acre-ft (6,910 hm³) below elevation 1,375.0 ft (419.10 m), top of spillway gates. Normal maximum, 4,619,000 acre-ft (5,700 hm³) below elevation 1,365.0 ft (416.05 m). Inactive storage, 1,178,000 acre-ft (1,450 hm³) below elevation 1,310.0 ft (399.29 m). No dead storage; elevation of invert of lowest outlet is 1,227.0 ft (373.99 m). Figures given herein represent elevations at outlet works and total contents adjusted for wind effect.

The spillway consists of 21 taintor gates, each 40 ft (12.2 m) wide by 29 ft (8.8 m) high; spillway capacity, 490,000 ft³/s (13,900 m³/s) at pool elevation 1,375 ft (419.10 m). Crest of spillway is at elevation 1,346 ft (410.26 m). Normal releases are through 12 tunnels 22 ft (6.7 m) in diameter. Installation of power units in 8 of these tunnels was completed in January 1956; maximum release through power tunnels is 46,000 ft³/s (1,300 m³/s); maximum release through 4 other tunnels is 130,000 ft³/s (3,680 m³/s) at pool elevation 1,375 ft (419.10 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 5,087,000 acre-ft (6,270 hm³) June 20, 1962, affected by wind; minimum since initial filling, 1,450,000 acre-ft (1,790 hm³) Oct. 23, 1956, affected by wind.

EXTREMES FOR CURRENT YEAR.--Maximum contents, 4,049,000 acre-ft (4,990 hm³) May 29; minimum contents, 2,472,000 acre-ft (3,050 hm³) Dec. 1.

CORRECTIONS.--Capacity and storage figures in the REMARKS paragraph are in error for some years. The following table gives the correct figures for water years 1953-80.

Date	Maximum capacity	Normal maximum	Inactive storage
Dec. 1952 to June 30, 1966	6,281,000	5,174,000	1,385,000
July 1, 1966 to Dec. 31, 1967	5,816,000	4,834,000	1,336,000
Jan. 1, 1968 to Dec. 31, 1974	5,750,000	4,767,000	1,243,000
Jan. 1, 1975 to Dec. 31, 1977	5,634,000	4,650,000	1,184,000
Jan. 1, 1978 to Sept. 30, 1980	5,603,000	4,619,000	1,178,000

Elevations shown in EXTREMES FOR PERIOD OF RECORD and EXTREMES FOR CURRENT YEAR, for water years 1953-80, may have been incorrectly computed and may be slightly in error.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS, IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents
Sept. 30	1352.90	3512000	
Oct. 31	1344.50	2893000	-619000
Nov. 30	1338.28	2482000	-411000
Dec. 31	1339.30	2543000	+61000
CAL YR 1980			-56000
Jan. 31	1346.54	3035000	+492000
Feb. 28	1352.98	3541000	+506000
Mar. 31	1355.11	3700000	+159000
Apr. 30	1358.58	4028000	+328000
May 31	1357.76	3974000	-54000
June 30	1355.80	3772000	-202000
July 31	1355.08	3685000	-87000
Aug. 31	1355.17	3713000	+28000
Sept. 30	1349.58	3263000	-450000
WTR YR 1981			-249000

NOTE.--Reservoir frozen over Jan. 8 to Mar. 3.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

	INITIAL DATE			80/10/08	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08
	INITIAL TIME-DEPTH-BOTTOM			1230 0000	1230 0006	1230 0016	1230 0032	1230 0065	1230 0098	1230 0123	1255 0005
	FINAL DATE										80/10/08
	FINAL TIME-NUMBER OF SAMPLES										1315 6
	CP-SPACE OR TIME-STATISTICAL FUNC										CP-S
00010	WATER	TEMP	CENT	18.4	18.1	18.0	18.0	17.9	17.8	17.8	
00011	WATER	TEMP	FAHN	65.1	64.6	64.4	64.4	64.2	64.0	64.0	
00020	AIR	TEMP	CENT	21.1							
00025	BAROMTRC	PRESSURE	MM OF HG	725							
00032	CLOUD	COVER	PERCENT	5							
00035	WIND	VELOCITY	MPH	5.0							
00036	WIND	DIR.FROM	NORTH-0	315							
00076	TURB	TRBIDMTR	HACH FTU								6.0
00077	TRANSP	SECCHI	INCHES	144							
00094	CNDUCTVY	FIELD	MICROMHO	830	829	830	829	829	828	827	
00299	DO	PROBE	MG/L	8.8	8.8	8.7	8.6	8.5	8.4	8.3	
00301	DO	SATUR	PERCENT	92.6	92.6	91.6	90.5	89.5	88.4	87.4	
00400	PH		SU	8.30	8.30	8.30	8.30	8.30	8.20	8.20	
00410	T ALK	CACO3	MG/L								168
00515	RESIDUE	DISS-105	C MG/L								584
00530	RESIDUE	TOT NFLT	MG/L								9
00610	NH3+NH4-	N TOTAL	MG/L								0.030
00619	UN-IONZD	NH3-NH3	MG/L								0.000
00620	NO3-N	TOTAL	MG/L								0.010
00665	PHOS-TOT		MG/L P								0.010
00900	TOT HARD	CACO3	MG/L								261
00916	CALCIUM	CA-TOT	MG/L								61.0
00927	MGNSIUM	MG,TOT	MG/L								27.0
00940	CHLORIDE	TOTAL	MG/L								9
00945	SULFATE	SO4-TOT	MG/L								232
32216	CHLRPHYL	TOTAL	UG/L								1.00
60050	ALGAE	TOTAL	/ML								5370
70507	PHOS-T	ORTHO	MG/L P								0.000
71000	ABUNDANT	ALGCOUNT	1ST DOM								4650
71001	ABUNDANT	ALGCOUNT	2ND DOM								360
71002	ABUNDANT	ALGCOUNT	3RD DOM								360
71003	ABUNDANT	ALGCOUNT	4TH DOM								710
71010	ABUNDANT	ALGGENUS	1ST DOM								69
71011	ABUNDANT	ALGGENUS	2ND DOM								71
71012	ABUNDANT	ALGGENUS	3RD DOM								88
71900	MERCURY	HG,TOTAL	UG/L								0.3

	INITIAL DATE			81/04/23	81/04/23	81/04/23	81/04/23	81/04/23	81/04/23	81/04/23	81/04/23
	INITIAL TIME-DEPTH-BOTTOM			1030 0000	1030 0006	1030 0016	1030 0032	1030 0065	1030 0098	1030 0131	1030 0005
	FINAL DATE										81/04/23
	FINAL TIME-NUMBER OF SAMPLES										1100 6
	CP-SPACE OR TIME-STATISTICAL FUNC										CP-S
00010	WATER	TEMP	CENT	7.5	7.4	7.4	7.4	7.3	7.3	7.2	
00011	WATER	TEMP	FAHN	45.5	45.3	45.3	45.3	45.1	45.1	45.0	
00020	AIR	TEMP	CENT	13.0							
00025	BAROMTRC	PRESSURE	MM OF HG	724							
00032	CLOUD	COVER	PERCENT	20							
00035	WIND	VELOCITY	MPH	15.0							
00036	WIND	DIR.FROM	NORTH-0	315							
00076	TURB	TRBIDMTR	HACH FTU								1.0
00077	TRANSP	SECCHI	INCHES	72							
00094	CNDUCTVY	FIELD	MICROMHO	796	795	795	795	794	792	790	
00299	DO	PROBE	MG/L	11.4	11.4	11.4	11.4	11.4	11.0	11.0	
00301	DO	SATUR	PERCENT	95.8	93.4	93.4	93.4	93.4	90.2	90.2	
00400	PH		SU	8.30	8.40	8.40	8.40	8.40	8.40	8.40	
00410	T ALK	CACO3	MG/L								360
00515	RESIDUE	DISS-105	C MG/L								516
00530	RESIDUE	TOT NFLT	MG/L								18
00610	NH3+NH4-	N TOTAL	MG/L								0.000
00619	UN-IONZD	NH3-NH3	MG/L								0.000
00620	NO3-N	TOTAL	MG/L								0.000
00665	PHOS-TOT		MG/L P								0.030
00720	CYANIDE	CN-TOT	MG/L								0.000
00900	TOT HARD	CACO3	MG/L								260
00916	CALCIUM	CA-TOT	MG/L								63.0
00927	MGNSIUM	MG,TOT	MG/L								25.0
00929	SODIUM	NA,TOT	MG/L								84.00
00931	SODIUM	ADSRTION	RATIO								2.3
00940	CHLORIDE	TOTAL	MG/L								14
00945	SULFATE	SO4-TOT	MG/L								246
01002	ARSENIC	AS,TOT	UG/L								1
01012	BERYLIUM	BE,TOT	UG/L								0.00
01022	BORON	B,TOT	UG/L								100
01027	CADMIUM	CD,TOT	UG/L								1
01034	CHROMIUM	CR,TOT	UG/L								0
01042	COPPER	CU,TOT	UG/L								0
01045	IRON	FE,TOT	UG/L								90
01051	LEAD	PB,TOT	UG/L								0
01055	MANGNESE	MN	UG/L								8.0
01067	NICKEL	NI,TOTAL	UG/L								11
01077	SILVER	AG,TOT	UG/L								0.0
01092	ZINC	ZN,TOT	UG/L								9
01105	ALUMINUM	AL,TOT	UG/L								145
01132	LITHIUM	LI,TOT	UG/L								40

Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

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     INITIAL DATE                       81/04/23   81/04/23   81/04/23   81/04/23   81/04/23   81/04/23   81/04/23   81/04/23
     INITIAL TIME-DEPTH-BOTTOM          1030 0000  1030 0006  1030 0016  1030 0032  1030 0065  1030 0098  1030 0131  1030 0005
     FINAL DATE                                                                                                      81/04/23
     FINAL TIME-NUMBER OF SAMPLES                                                                                    1100 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                                                               CP-S
01147 SELENIUM  SE,TOT     UG/L                                                                                             1
32230 CHLRPHYL  A          MG/L                                                                                      0.001
39516 PCBS      WHL SMPL   UG/L                                                                                      0.000
70507 PHOS-T    ORTHO      MG/L P                                                                                    0.000
71900 MERCURY   HG,TOTAL   UG/L                                                                                        0.0
     INITIAL DATE                       81/05/27   81/05/27   81/05/27   81/05/27   81/05/27   81/05/27   81/05/27   81/05/27
     INITIAL TIME-DEPTH-BOTTOM          1200 0000  1200 0006  1200 0016  1200 0032  1200 0065  1200 0098  1200 0131  1220 0005
     FINAL DATE                                                                                                      81/05/27
     FINAL TIME-NUMBER OF SAMPLES                                                                                    1235 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                                                               CP-S
00010 WATER     TEMP       CENT         14.4       14.4       13.7       13.4       13.0       13.9       13.4
00011 WATER     TEMP       FAHN         57.9       57.9       56.7       56.1       55.4       57.0       56.1
00020 AIR       TEMP       CENT         19.5
00025 BAROMTRC  PRESSURE   MM OF HG      726
00032 CLOUD     COVER      PERCENT        98
00035 WIND      VELOCITY   MPH          15.0
00036 WIND      DIR,FROM   NORTH-0       180
00076 TURB      TRBIDMTR   HACH FTU                                                                                    1.0
00077 TRANSP    SECCHI     INCHES         96
00094 CNDUCTVY  FIELD      MICROMHO      835        835        833        832        828        802        800
00299 DO        PROBE      MG/L          9.1        9.1        9.1        9.0        9.1        8.5        8.2
00301 DO        SATUR      PERCENT      87.5       87.5       87.5       84.9       85.8       81.7       77.4
00400 PH                   SU           8.30       8.30       8.30       8.30       8.30       8.30       8.20
00410 T ALK     CACO3      MG/L                                                                                        176
00515 RESIDUE   DISS-105   C MG/L                                                                                      526
00530 RESIDUE   TOT NFLT   MG/L                                                                                          3
00610 NH3+NH4-  N TOTAL    MG/L                                                                                      0.000
00619 UN-IONZD  NH3-NH3    MG/L                                                                                      0.000
00620 NO3-N     TOTAL      MG/L                                                                                      0.000
00665 PHOS-TOT             MG/L P                                                                                    0.010
00900 TOT HARD  CACO3      MG/L                                                                                        260
00916 CALCIUM   CA-TOT     MG/L                                                                                       68.0
00927 MGNSIUM   MG,TOT     MG/L                                                                                       22.0
00940 CHLORIDE  TOTAL      MG/L                                                                                         10
00945 SULFATE   SO4-TOT    MG/L                                                                                        247
32216 CHLRPHYL  TOTAL      UG/L                                                                                      33.00
70507 PHOS-T    ORTHO      MG/L P                                                                                    0.000
71900 MERCURY   HG,TOTAL   UG/L                                                                                        0.4
     INITIAL DATE                       81/06/17   81/06/17   81/06/17   81/06/17   81/06/17   81/06/17   81/06/17   81/06/17
     INITIAL TIME-DEPTH-BOTTOM          1100 0000  1100 0006  1100 0016  1100 0032  1100 0065  1100 0098  1100 0130  1100 0005
     FINAL DATE                                                                                                      81/06/17
     FINAL TIME-NUMBER OF SAMPLES                                                                                    1130 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                                                               CP-S
00010 WATER     TEMP       CENT         19.6       19.6       19.5       19.5       19.1       14.3       13.3
00011 WATER     TEMP       FAHN         67.3       67.3       67.1       67.1       66.4       57.7       55.9
00020 AIR       TEMP       CENT         24.5
00025 BAROMTRC  PRESSURE   MM OF HG      722
00032 CLOUD     COVER      PERCENT        50
00035 WIND      VELOCITY   MPH           8.0
00036 WIND      DIR,FROM   NORTH-0       315
00076 TURB      TRBIDMTR   HACH FTU                                                                                    3.0
00077 TRANSP    SECCHI     INCHES        120
00094 CNDUCTVY  FIELD      MICROMHO      837        837        836        836        835        819        813
00299 DO        PROBE      MG/L          7.8        7.8        7.8        7.8        7.8        7.9        7.5
00301 DO        SATUR      PERCENT      84.8       84.8       84.8       84.8       83.0       76.0       70.8
00400 PH                   SU           8.30       8.30       8.30       8.30       8.30       8.20       8.20
00410 T ALK     CACO3      MG/L                                                                                        186
00515 RESIDUE   DISS-105   C MG/L                                                                                      590
00530 RESIDUE   TOT NFLT   MG/L                                                                                          8
00610 NH3+NH4-  N TOTAL    MG/L                                                                                      0.020
00619 UN-IONZD  NH3-NH3    MG/L                                                                                      0.000
00620 NO3-N     TOTAL      MG/L                                                                                      0.000
00665 PHOS-TOT             MG/L P                                                                                    0.010
00900 TOT HARD  CACO3      MG/L                                                                                        291
00916 CALCIUM   CA-TOT     MG/L                                                                                       63.0
00927 MGNSIUM   MG,TOT     MG/L                                                                                       33.0
00940 CHLORIDE  TOTAL      MG/L                                                                                         11
00945 SULFATE   SO4-TOT    MG/L                                                                                        260
70507 PHOS-T    ORTHO      MG/L P                                                                                    0.000
71900 MERCURY   HG,TOTAL   UG/L                                                                                        0.2
     INITIAL DATE                       81/06/17   81/06/24   81/06/24   81/06/24   81/06/24   81/06/24   81/06/24   81/06/24
     INITIAL TIME-DEPTH-BOTTOM          1130 0005  1515 0000  1515 0006  1515 0016  1515 0032  1515 0065  1525 0005  1515 0005
     FINAL DATE                         81/06/17                                                          81/06/24   81/06/24
     FINAL TIME-NUMBER OF SAMPLES       1145 6                                                            1540 6     1600 6
     CP-SPACE OR TIME-STATISTICAL FUNC  CP-S                                                              CP-S       CP-S
00010 WATER     TEMP       CENT                    22.0       22.0       20.0       20.0       19.0
00011 WATER     TEMP       FAHN                    71.6       71.6       68.0       68.0       66.2
00020 AIR       TEMP       CENT                    25.0
00032 CLOUD     COVER      PERCENT                   70
00035 WIND      VELOCITY   MPH                     11.0
00036 WIND      DIR,FROM   NORTH-0                  270
00062 WATER     SURF ELE   IN FEET               1355.2
00076 TURB      TRBIDMTR   HACH FTU                                                                                   70.0
00410 T ALK     CACO3      MG/L                                                                                        177
00515 RESIDUE   DISS-105   C MG/L                                                                                      688
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Analyses by Corps of Engineers.
Tables from STORET.

06452500 LAKE FRANCIS CASE AT PICKSTOWN, SD--Continued

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       INITIAL DATE                           81/06/17  81/06/24  81/06/24  81/06/24  81/06/24  81/06/24  81/06/24  81/06/24
       INITIAL TIME-DEPTH-BOTTOM              1130 0005 1515 0000 1515 0006 1515 0016 1515 0032 1515 0065 1525 0005 1515 0005
       FINAL DATE                             81/06/17
       FINAL TIME-NUMBER OF SAMPLES           1145 G                                                      81/06/24  81/06/24
       CP-SPACE OR TIME-STATISTICAL FUNC      CP-S                                                        1540 G    1600 G
00530 RESIDUE   TOT NFLT     MG/L                                                                         CP-S      CP-S
00610 NH3+NH4-  N TOTAL      MG/L                                                                                    614
00619 UN-IONZD   NH3-NH3     MG/L                                                                                   0.070
00620  NO3-N     TOTAL       MG/L                                                                                   0.010
00665 PHOS-TOT              MG/L P                                                                                  0.000
00900 TOT HARD   CACO3       MG/L                                                                                   0.600
00916 CALCIUM    CA-TOT      MG/L                                                                                    317
00927 MGNSIUM   MG,TOT       MG/L                                                                                   67.0
00940 CHLORIDE    TOTAL      MG/L                                                                                   36.0
00945 SULFATE   SO4-TOT      MG/L                                                                                     12
32216 CHLRPHYL   TOTAL       UG/L         4.00                                                                       270
70507  PHOS-T    ORTHO      MG/L P                                                                65.00
       INITIAL DATE                                                                                                 0.000
                                              81/07/15  81/07/15  81/07/15  81/07/15  81/07/15  81/07/15  81/07/15  81/07/15
       INITIAL TIME-DEPTH-BOTTOM              1050 0000 1050 0006 1050 0016 1050 0032 1050 0065 1050 0098 1050 0127 1050 0005
       FINAL DATE                                                                                                   81/07/15
       FINAL TIME-NUMBER OF SAMPLES                                                                                 1120 G
       CP-SPACE OR TIME-STATISTICAL FUNC                                                                            CP-S
00010  WATER       TEMP      CENT         23.5      23.5      23.5      22.8      21.8      18.2      16.8
00011  WATER       TEMP      FAHN         74.3      74.3      74.3      73.0      71.2      64.8      62.2
00020   AIR        TEMP      CENT         24.0
00025 BAROMTRC  PRESSURE  MM OF HG         731
00032  CLOUD      COVER    PERCENT         100
00035   WIND    VELOCITY     MPH           6.0
00036   WIND    DIR.FROM  NORTH=0          315
00077  TRANSP    SECCHI     INCHES         144
00094 CNDUCTVY  FIELD     MICROMHO         836       836       836       835       835       832       829
00299    DO      PROBE       MG/L          7.4       7.4       7.4       7.3       7.1       6.8       5.9
00301    DO      SATUR     PERCENT        87.1      87.1      87.1      83.9      80.7      71.6      60.8
00400    PH                   SU          8.20      8.20      8.20      8.20      8.20      8.10      8.00
32216 CHLRPHYL   TOTAL       UG/L
       INITIAL DATE                                                                                                15.00
                                              81/08/12  81/08/12  81/08/12  81/08/12  81/08/12  81/08/12  81/08/12  81/08/12
       INITIAL TIME-DEPTH-BOTTOM              1005 0000 1005 0006 1005 0016 1005 0032 1005 0065 1005 0098 1005 0124 1005 0005
       FINAL DATE                                                                                                   81/08/12
       FINAL TIME-NUMBER OF SAMPLES                                                                                 1035 G
       CP-SPACE OR TIME-STATISTICAL FUNC                                                                            CP-S
00010  WATER       TEMP      CENT         24.3      24.3      24.2      24.0      23.9      22.6      20.5
00011  WATER       TEMP      FAHN         75.7      75.7      75.6      75.2      75.0      72.7      68.9
00020   AIR        TEMP      CENT         25.0
00025 BAROMTRC  PRESSURE  MM OF HG         730
00032  CLOUD      COVER    PERCENT           0
00035   WIND    VELOCITY     MPH           2.0
00036   WIND    DIR.FROM  NORTH=0          225
00077  TRANSP    SECCHI     INCHES         180
00094 CNDUCTVY  FIELD     MICROMHO         845       845       845       845       845       849       851
00299    DO      PROBE       MG/L          7.6       7.6       7.6       7.4       7.3       6.1       4.1
00301    DO      SATUR     PERCENT        89.4      89.4      89.4      87.1      85.9      70.1      45.6
00400    PH                   SU          8.10      8.10      8.10      8.10      8.10      8.00      7.80
32216 CHLRPHYL   TOTAL       UG/L
       INITIAL DATE                                                                                                 3.00
                                              81/08/13  81/08/13  81/08/13  81/08/13  81/08/13  81/08/13  81/08/13  81/09/18
       INITIAL TIME-DEPTH-BOTTOM              0910 0000 0910 0006 0910 0016 0910 0032 0910 0065 0910 0098 0910 0131 1320 0000
00010  WATER       TEMP      CENT         23.0      23.0      23.0      23.0      23.0      23.0      22.0      21.0
00011  WATER       TEMP      FAHN         73.4      73.4      73.4      73.4      73.4      73.4      71.6      69.8
00020   AIR        TEMP      CENT         21.0                                                                  25.5
00032  CLOUD      COVER    PERCENT         100                                                                     0
00035   WIND    VELOCITY     MPH          12.0
00036   WIND    DIR.FROM  NORTH=0          150                                                                   180
00062  WATER    SURF ELE   IN FEET      1354.5                                                                1353.9
       INITIAL DATE                           81/09/18  81/09/18  81/09/18  81/09/18  81/09/18  81/09/18
       INITIAL TIME-DEPTH-BOTTOM              1320 0006 1320 0016 1320 0032 1320 0065 1320 0095 1320 0005
       FINAL DATE                                                                       81/09/18
       FINAL TIME-NUMBER OF SAMPLES                                                     1335 G
       CP-SPACE OR TIME-STATISTICAL FUNC                                                CP-S
00010  WATER       TEMP      CENT         21.0      21.0      21.0      21.0      21.0
00011  WATER       TEMP      FAHN         69.8      69.8      69.8      69.8      69.8
32216 CHLRPHYL   TOTAL       UG/L                                                     11.00
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Analyses by Corps of Engineers.
Tables from STORET.

BEST DOCUMENT AVAILABLE

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD

LOCATION.--Lat 43°03'54", long 98°33'11", in NW¼NE¼ sec.8, T.95 N., R.65 W., Charles Mix County, Hydrologic Unit 10170101, in powerhouse of Fort Randall Dam on Missouri River at Pickstown, 0.8 mi (1.3 km) upstream from Randall Creek, and at mile 879.8 (1,415.6 km).

DRAINAGE AREA.--263,500 mi² (682,500 km²), approximately.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1947 to current year. Prior to October 1969 published as "below Fort Randall Dam".

GAGE.--Totalizing flowmeters on each turbine in Fort Randall powerhouse. Prior to Nov. 10, 1965, water-stage recorder at site 7.0 mi (11.3 km) downstream at datum 1,230.00 ft (374.904 m) National Geodetic Vertical Datum of 1929 and Nov. 10, 1965, to June 30, 1969, at datum 5.00 ft (1.524 m) lower (Corps of Engineers bench mark).

REMARKS.--Records good. Flow completely regulated by Lake Francis Case (see station 06452500). Many diversions for irrigation above station.

COOPERATION.--Daily discharge determined from flow through turbines furnished by Corps of Engineers.

AVERAGE DISCHARGE.--34 years, 25,380 ft³/s (718.8 m³/s), 18,388,000 acre-ft/yr (22.7 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 447,000 ft³/s (12,700 m³/s) Apr. 12, 1952; maximum gage height, 20.82 ft (6.346 m) Apr. 12, 1952 (site and datum then in use); minimum daily discharge, 100 ft³/s (2.83 m³/s) Mar. 29, 1962.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in April 1943 reached a stage of about 16.5 ft (5.03 m). Maximum stage known, in April 1881, was about 5 ft (1.5 m) higher than that of April 1943, both at site 7.0 mi (11.3 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum daily discharge during year, 39,600 ft³/s (1,120 m³/s) Nov. 11; minimum daily 4,900 ft³/s (139 m³/s) Feb. 21 and 22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	33700	33200	14800	9600	10000	11500	29300	33300	30100	36000	29000	30500
2	34000	33500	18000	10000	13000	11800	28400	31500	30300	31100	29700	32200
3	34200	33800	15000	9900	12600	12200	28300	31500	31300	28400	30600	30800
4	36300	32600	15000	9900	13000	12700	28200	32000	28200	26900	28300	30700
5	36600	32600	16100	11200	14500	12700	28300	32400	29200	26200	28400	30600
6	37100	32700	14900	12700	15200	13600	28300	32400	28200	27500	26300	30000
7	34000	31900	14400	13700	14800	13600	30700	32200	28700	27900	23000	29500
8	34200	31400	14000	13200	14900	12100	32400	31900	29300	27600	28900	29800
9	33200	32500	14500	13000	13600	12400	31500	31100	30800	26900	25100	30400
10	32700	36700	13400	12400	13800	12800	31900	30900	31400	28700	28900	29900
11	35500	39600	14000	13000	14800	9100	32300	31800	32600	29300	31300	29800
12	35700	36200	14200	12600	13900	11500	32800	31400	34600	30700	31100	31800
13	36100	36000	13100	13000	13600	12100	33000	32100	32000	30900	31100	29000
14	36900	35800	13800	14000	12900	12100	32100	30600	29600	32100	30900	31100
15	35800	37100	13800	13200	12800	13400	31300	29600	27600	33000	28800	31800
16	35000	36400	14400	13200	9500	16500	30400	29700	24000	33200	29800	32700
17	30800	36900	12300	12800	9100	19400	30500	29700	19600	33200	31700	32700
18	32600	37200	13000	13100	8900	22600	29300	29000	21300	33300	31900	31100
19	32400	37300	11900	13400	5700	24700	29300	26600	25000	33100	31900	31900
20	33400	38300	11900	-12500	5900	27800	29800	27700	27100	33400	32400	32100
21	33100	37300	13700	11800	4900	31400	29800	27900	31500	34100	32200	34100
22	34000	34400	15100	11100	4900	32800	29800	26600	31400	34500	32100	33200
23	34100	32800	15700	11300	5800	35200	28900	25800	32000	34100	28300	32900
24	33200	31300	15800	11100	5700	34100	29000	26500	28600	32500	29700	30300
25	32200	27600	14500	11400	6800	32500	30000	27100	28500	33300	29800	30800
26	30600	24300	14500	10700	11000	33300	31600	28000	28600	31700	30200	31700
27	33000	20400	14600	10500	11400	31500	32000	28000	30700	28700	27900	31100
28	34300	17100	14600	9200	11600	31300	31500	28200	30700	27700	28700	33600
29	33000	14500	14200	9300	---	31600	32900	29300	29600	28300	29500	33300
30	33300	14700	13500	8800	---	31900	33400	29300	34100	28400	29400	29500
31	31900	---	11600	9600	---	24600	---	29400	---	28800	29800	---
TOTAL	1052900	956100	440300	361200	304600	649800	917000	925500	876600	953500	912700	938900
MEAN	33960	31870	14200	11650	10880	20960	30570	29850	29220	30760	29440	31300
MAX	37100	39600	18000	14000	15200	35200	33400	33300	34600	36000	32400	34100
MIN	30600	14500	11600	8800	4900	9100	28200	25800	19600	26200	23000	29000
AC-FT	2088000	1896000	873300	716400	604200	1289000	1819000	1836000	1739000	1891000	1810000	1862000

CAL YR 1980 TOTAL 9403100 MEAN 25690 MAX 41700 MIN 6300 AC-FT 18650000
WTR YR 1981 TOTAL 9289100 MEAN 25450 MAX 39600 MIN 4900 AC-FT 18420000

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1974 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to September 1978.
WATER TEMPERATURES: October 1974 to September 1978.
DISSOLVED OXYGEN: October 1974 to September 1978.

INSTRUMENTATION.--Water-quality monitor since June 1973.

REMARKS.--Water is supplied to the monitor from the raw water intake located in the penstocks. This location is 121 ft (37 m) below the normal pool surface. Depth of observation is 1,227 ft (374 m) above mean sea level. Records prior to October 1974 are on file in the District office, Corps of Engineers, Omaha, NE. In addition to the water-quality monitor, samples were collected once a month.

COOPERATION.--Records of specific conductance, water temperature, dissolved oxygen and pH were furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily mean, 850 micromhos Mar. 10, 1975; minimum daily mean, 606 micromhos Dec. 7, 1976.
WATER TEMPERATURES: Maximum daily mean, 25.5°C Aug. 9, 12-16, 25, 1975, July 31 to Aug. 2, Aug. 5, 10, 1977, Aug. 25, 1978; minimum daily mean, 0.0°C Jan. 21-26, 1975.
DISSOLVED OXYGEN: Maximum daily mean, 13.2 mg/L Jan. 2, 3, Feb. 5-11, 14-21, 1975; minimum daily mean, 6.7 mg/L Aug. 6, 8, 1977.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
OCT										
20...	1200	40500	900	--	15.0	1.7	10.0	--	K5	260
NOV										
18...	1200	39900	840	7.5	9.2	1.3	9.6	K1	K1	280
DEC										
15...	1230	29400	820	7.4	4.0	2.2	11.0	K1	K1	280
JAN										
26...	1200	20100	890	8.4	1.0	3.5	12.8	--	--	270
FEB										
25...	1000	13600	760	8.3	2.5	5.4	15.4	ND	ND	270
MAR										
24...	1100	34400	820	7.4	7.5	2.8	13.1	K2	<1	280
APR										
27...	1230	33500	940	7.7	13.0	1.6	14.5	K8	70	270
MAY										
20...	1100	28800	820	8.2	12.2	3.1	9.4	<1	K3	260
JUN										
15...	1300	27400	710	8.3	18.5	1.0	9.1	K8	K19	270
JUL										
27...	1200	32900	830	8.2	21.5	1.0	8.1	K8	K7	280
AUG										
24...	1200	37300	870	8.2	23.5	1.1	9.2	<1	K200	270
SEP										
30...	1430	36600	800	8.5	20.5	2.7	8.3	K1	K4	250

< Less than.
K Non-ideal colony count.
ND Not detected.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNESIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORPTION RATIO (00931)	POTASSIUM, DIS-SOLVED (MG/L AS K) (00935)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT 20...	95	61	25	84	41	2.3	5.7	260	160	10
NOV 18...	110	67	28	83	38	2.1	6.0	290	170	11
DEC 15...	90	61	26	85	41	2.3	6.1	250	160	11
JAN 26...	110	64	26	81	39	2.2	4.7	280	160	11
FEB 25...	110	64	26	83	40	2.2	4.6	280	160	11
MAR 24...	120	66	27	81	39	2.1	4.7	260	160	13
APR 27...	100	67	25	77	38	2.0	5.0	270	170	22
MAY 20...	100	63	26	88	41	2.4	4.7	260	160	12
JUN 15...	110	66	26	77	38	2.0	4.6	280	160	10
JUL 27...	120	66	27	84	39	2.4	5.3	290	160	10
AUG 24...	100	64	27	83	39	2.4	4.9	270	170	12
SEP 30...	93	60	25	82	41	2.5	4.5	260	160	12

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT 20...	.5	<.1	548	--	.75	59900	20	.00	.04	.030
NOV 18...	.4	6.2	--	594	.81	64000	9	.00	.04	.020
DEC 15...	.5	6.3	502	542	.68	40500	11	.07	.07	.050
JAN 26...	.4	5.3	548	569	.75	29700	16	.00	.03	.030
FEB 25...	.4	4.9	554	580	.75	20300	4	2.3	.09	.080
MAR 24...	.5	4.5	578	553	.79	53700	0	.04	.03	.000
APR 27...	.5	4.6	607	574	.83	54900	1	.04	.03	.120
MAY 20...	.4	4.7	562	555	.76	43700	0	.03	.07	.100
JUN 15...	.4	4.1	585	565	.80	44100	4	.09	.05	.010
JUL 27...	.4	5.0	594	585	.81	52800	0	.11	.09	.100
AUG 24...	.5	5.2	569	569	.77	57300	9	<.09	<.09	<.060
SEP 30...	.6	6.0	558	546	.76	55100	17	<.10	.11	.080

< Less than.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
OCT										
20...	.04	.030	.30	.80	.33	.50	.83	.33	.87	3.9
NOV										
18...	.03	.030	.52	.66	.58	.15	.69	.54	.73	3.2
DEC										
15...	.06	.020	.43	.84	.48	.36	.85	.55	.93	4.1
JAN										
26...	.04	.040	.59	.52	.62	.00	.56	.62	.59	2.6
FEB										
25...	.10	.090	1.4	.62	1.5	.00	.71	3.8	.80	3.5
MAR										
24...	.00	.000	.87	.77	.87	.00	.77	.91	.60	3.5
APR										
27...	.15	.090	1.2	1.2	1.3	.00	1.30	1.3	1.5	5.9
MAY										
20...	.13	.120	1.2	.83	1.3	.00	.55	1.3	.62	2.7
JUN										
15...	.01	.120	.44	.47	.45	.14	.59	.54	.64	2.8
JUL										
27...	.13	.150	.65	.11	.75	.00	.26	.86	.35	1.6
AUG										
24...	.08	<.060	.51	--	.61	.00	.55	.74	--	--
SEP										
30...	.10	.110	.45	.47	.53	.05	.58	.67	.69	3.1

DATE	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
OCT									
20...	.020	.040	.040	.12	.06	7.3	.2	--	--
NOV									
18...	.020	.020	.030	.09	.06	--	--	10	--
DEC									
15...	.010	.070	.040	.12	.03	--	--	--	--
JAN									
26...	.030	.030	.030	.09	--	7.4	.5	--	--
FEB									
25...	.000	.050	.060	.18	--	--	--	5.3	--
MAR									
24...	.000	.020	.020	.06	--	--	--	4.6	1300
APR									
27...	.040	.010	.020	.06	--	8.3	.3	--	--
MAY									
20...	.010	.030	.030	.09	--	--	--	12	780
JUN									
15...	.020	.030	.010	.03	--	--	--	3.5	270
JUL									
27...	.020	<.010	<.010	.03	--	11	.0	--	86
AUG									
24...	.020	.010	.010	.03	--	--	--	2.0	--
SEP									
30...	.020	<.010	<.010	--	--	--	--	6.7	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT											
20...	1200	3	0	3	0	--	<1	10	10	0	1
JAN											
26...	1200	2	1	1	0	--	<1	0	0	0	0
APR											
27...	1230	2	0	2	0	--	<1	10	10	0	0
MAY											
20...	1100	--	--	--	--	--	--	--	--	--	--
JUL											
27...	1200	3	0	3	1	--	<1	10	0	10	0

< Less than.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT 20...	--	<3	13	13	0	170	<10	0	0	0	20
JAN 26...	--	<3	4	2	2	210	10	4	0	4	20
APR 27...	--	<3	5	3	2	60	<10	0	0	2	60
MAY 20...	--	--	--	--	--	110	--	--	--	--	--
JUL 27...	--	<3	4	2	2	60	11	5	1	4	60

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT 20...	20	2	.4	.4	.0	1	0	1	20	20	4
JAN 26...	10	7	.0	.0	.2	2	0	2	10	3	7
APR 27...	10	50	.1	.0	.1	0	0	2	10	4	6
MAY 20...	--	--	--	--	--	--	--	--	--	--	--
JUL 27...	6	50	.1	.1	.0	1	1	0	10	4	6

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT 20...	1200	40500	25	2730	--	--	--	--	--
NOV 18...	1200	39900	27	2910	--	99	100	--	--
DEC 15...	1230	29900	89	7190	--	--	--	--	--
JAN 26...	1200	20100	80	4340	--	91	98	98	100
FEB 25...	1000	13600	60	2200	--	93	97	100	--
MAR 20...	1100	34400	49	4550	--	87	91	100	--
APR 27...	1230	33500	46	4160	78	100	--	--	--
MAY 20...	1100	28800	39	3030	92	--	--	--	--
JUN 15...	1300	27900	51	3840	99	--	--	--	--
JUL 27...	1200	32400	54	4800	95	--	--	--	--
AUG 24...	1200	37300	71	7150	96	--	--	--	--
SEP 30...	1430	36600	40	3950	79	--	--	--	--

< Less than.

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 18,80	MAR 24,81	MAY 20,81	JUN 15,81
TIME	1200	1100	1100	1300
TOTAL CELLS/ML	1700	1300	780	270
DIVERSITY: DIVISION	0.8	0.2	0.7	0.9
.CLASS	0.8	0.2	0.7	0.9
..ORDER	1.4	0.3	0.9	1.0
...FAMILY	1.4	0.3	0.9	1.3
....GENUS	1.4	1.3	0.9	1.3

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	210#	76
...OOCYSTACEAE								
....ANKISTRODESMUS	13	1	26	2	--	-	--	-
....CLOSTERIOPSIS	13	1	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	56	7	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....OOCYSTIS	--	-	--	-	--	-	13	5
....SELENASTRUM	--	-	26	2	--	-	--	-
..TETRASPORALES								
...COCCOMYXACEAE								
....ELAKATOTHRIX	--	-	--	-	28	4	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	--	-	--	-	28	4	--	-
...PHACOTACEAE								
....PHACOTUS	--	-	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	13	1	13	1	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	13	5
..PENNALES								
...ACHNANTHACEAE								
....ACHNANTHES	--	-	--	-	--	-	--	-
...CYMBELLACEAE								
....AMPHORA	--	-	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-	--	-
...DIATOMACEAE								
....DIATOMA	--	-	--	-	--	-	13	5
...FRAGILARIACEAE								
....ASTERIONELLA	--	-	740#	55	660#	84	--	-
....FRAGILARIA	280#	16	500#	40	--	-	--	-
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	13	5
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOMONADACEAE								
....CRYPTOMONAS	13	1	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	1200#	67	--	-	14	2	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....APHANIZOMENON	230	13	--	-	--	-	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...CERATIACEAE								
....CERATIUM	--	-	--	-	--	-	13	5

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	JUL 27,81	AUG 24,81	SEP 30,81
TIME	1200	1200	1430
TOTAL CELLS/ML	86	1900	95
DIVERSITY: DIVISION	0.7	0.5	0.0
.CLASS	0.7	0.5	0.0
..ORDER	0.7	0.9	0.0
...FAMILY	1.5	0.9	0.0
....GENUS	1.9	0.9	0.0

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	110	6	--	-
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	--	-	--	-	--	-
....CLOSTERIOPSIS	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	95#	100
....OOCYSTIS	14#	17	--	-	--	-
....SELENASTRUM	--	-	--	-	--	-
..TETRASPORALES						
...COCCOMYXACEAE						
....ELAKATOTHRIX	--	-	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	--	-	--	-	--	-
...PHACOTACEAE						
....PHACOTUS	--	-	14	1	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	--	-	28	1	--	-
....STEPHANODISCUS	--	-	--	-	--	-
..PENNALES						
...ACHNANTHACEAE						
....ACHNANTHES	--	-	14	1	--	-
...CYMBELLACEAE						
....AMPHORA	14#	17	--	-	--	-
....CYMBELLA	29#	33	14	1	--	-
...DIATOMACEAE						
....DIATOMA	--	-	--	-	--	-
...FRAGILARIACEAE						
....ASTERIONELLA	--	-	--	-	--	-
....FRAGILARIA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	29#	33	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOMONADACEAE						
....CRYPTOMONAS	--	-	--	-	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	--	-	1600#	84	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....APHANIZOMENON	--	-	--	-	--	-
...OSCILLATORIACEAE						
....OSCILLATORIA	--	-	110	6	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...CERATIACEAE						
....CERATIUM	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06453000 MISSOURI RIVER AT FORT RANDALL DAM, SD--Continued

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      INITIAL DATE                                81/01/26  81/07/27
      INITIAL TIME-DEPTH-BOTTOM                   1200 0000 1155 0000
00010   WATER       TEMP       CENT                  1.0        21.5
00011   WATER       TEMP       FAHN                 33.8        70.7
00020    AIR        TEMP       CENT                  5.0        12.5
00025 BAROMTRC   PRESSURE    MM OF HG                729
00032   CLOUD       COVER      PERCENT               100         100
00035    WIND     VELOCITY      MPH                 25.0         7.0
00036    WIND     DIR.FROM    NORTH=0                315         135
00061   STREAM      FLOW,     INST-CFS               140         900
00062   WATER     SURF ELE    IN FEET             1345.9      1354.0
00065   STREAM      STAGE       FEET             1231.57     1234.25
00094 CNDUCTVY    FIELD       MICROMHO               890         830
00299     DO        PROBE       MG/L                12.0         8.1
00301     DO        SATUR      PERCENT              90.1        92.0
00400     PH                     SU                             8.20
00720 CYANIDE       CN-TOT      MG/L               0.000
39516    PCBS     WHL SMPL      UG/L               0.000
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Analyses by Corps of Engineers.
Tables from STORET.

06453010 MISSOURI RIVER AT GREENWOOD, SD

STAGE RECORDS

LOCATION.--Lat 42°55'11", long 98°23'01", in SE¼NW¼NW¼ sec.35, T.94 N., R.64 W., Charles Mix County, Hydrologic Unit 10170101, on left bank 0.25 mi (0.4 km) southeast of Greenwood at mile 865.0 mi (1,391.8 km).

PERIOD OF RECORD.--1957 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,200.00 ft (365.760 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Stage regulated by Lake Francis Case 15.0 mi (24.1 km) upstream (see station 06452500). Prior to Oct. 1, 1980, gage heights in files of Corps of Engineers.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	28.12	27.89	24.84	23.46	23.52	23.67	27.34	27.99	27.40	28.43	27.54	27.73
2	28.06	28.03	25.39	23.46	24.64	23.76	27.19	27.84	27.47	28.17	27.54	27.66
3	28.15	27.96	24.80	23.53	25.25	23.81	27.16	27.69	27.50	27.52	27.40	27.89
4	28.43	27.99	24.90	23.60	25.35	23.83	27.12	27.71	27.31	27.53	27.58	27.68
5	28.50	27.87	24.70	24.04	25.14	23.95	27.12	27.78	27.23	27.11	27.14	27.55
6	28.63	27.81	25.05	23.60	25.34	23.88	27.17	27.88	27.24	27.41	27.23	27.54
7	28.40	27.80	24.75	24.36	---	24.30	27.44	27.83	27.22	26.40	26.51	27.58
8	28.06	27.80	24.55	24.20	---	23.81	27.62	27.78	27.27	27.57	26.86	27.51
9	28.07	27.70	24.60	24.24	---	23.96	27.74	27.86	27.37	27.12	27.15	27.54
10	27.90	28.03	24.43	24.37	---	23.84	27.74	27.53	27.68	27.03	26.84	27.74
11	28.06	28.99	24.50	24.24	---	23.88	27.71	27.10	27.75	27.40	27.72	27.51
12	28.34	28.62	24.35	24.33	---	23.12	27.83	27.74	28.15	27.70	27.78	27.76
13	28.51	28.10	24.54	24.17	---	23.15	27.84	27.65	27.75	27.65	27.94	28.05
14	28.40	28.23	24.34	24.53	---	23.76	27.84	27.11	27.71	28.04	27.74	27.39
15	28.44	28.51	24.04	24.33	---	23.98	27.63	27.37	27.84	28.04	27.85	27.68
16	28.45	28.41	24.41	24.39	---	24.70	27.61	27.44	26.87	28.28	27.27	28.06
17	27.85	28.42	24.18	24.67	---	25.26	---	27.45	25.80	27.96	27.81	28.03
18	27.20	28.76	24.23	24.50	---	25.67	---	27.43	25.87	28.20	27.72	28.01
19	---	28.51	24.03	24.32	---	26.19	---	27.12	26.40	28.21	27.73	28.08
20	---	28.71	24.02	24.19	---	26.86	---	27.23	26.40	28.15	27.84	27.45
21	28.25	28.55	24.15	23.47	---	27.60	---	27.19	27.91	28.45	27.83	27.83
22	28.04	28.38	24.74	23.79	---	27.77	---	27.04	27.84	28.26	27.90	28.18
23	28.08	27.91	24.47	23.42	---	28.07	---	26.78	27.93	28.30	27.82	28.20
24	27.94	27.75	24.61	23.49	---	28.10	---	26.74	27.27	28.24	27.80	28.01
25	27.86	27.40	24.91	23.57	---	28.03	---	26.47	27.28	28.08	27.82	27.74
26	27.56	26.73	24.64	23.45	23.10	27.83	---	27.10	27.20	27.45	27.58	27.77
27	27.79	26.37	24.51	23.41	23.70	27.79	---	27.12	27.72	27.91	27.34	28.20
28	28.13	25.54	24.22	23.45	23.80	27.12	27.72	27.11	27.51	26.92	27.04	27.87
29	27.97	24.72	24.50	23.38	---	27.65	27.75	27.09	27.56	27.53	27.80	28.22
30	27.82	24.81	24.25	23.25	---	27.72	27.93	27.43	28.20	27.48	27.87	28.12
31	27.85	---	24.36	23.35	---	27.34	---	27.31	---	27.26	27.52	---
TOTAL	---	832.30	760.64	742.42	---	791.60	---	850.53	819.76	859.40	850.88	835.46
MEAN	---	27.74	24.54	23.95	---	25.54	---	27.43	27.33	27.72	27.45	27.85
MAX	---	28.99	25.34	24.67	---	28.10	---	27.99	28.20	28.45	27.94	28.22
MIN	---	24.72	24.02	23.25	---	23.12	---	26.74	25.80	26.40	26.85	27.39

06464500 KEYA PAHA RIVER AT WEWELA, SD

LOCATION.--Lat 43°01'42", long 99°46'45", in SE¼ sec.24, T.95 N., R.76 W., Tripp County, Hydrologic Unit 10150006, on left bank 13 ft (4 m) downstream from bridge on U.S. Highway 183, 1.0 mi (1.6 km) north of Wewela, 4.5 mi (7.2 km) upstream from Holt Creek, and 11.5 mi (18.5 km) downstream from Lost Creek.

DRAINAGE AREA.--1,070 mi² (2,770 km²), approximately.

PERIOD OF RECORD.--November 1937 to September 1940, October 1947 to current year. Monthly discharge only for October 1947, published in WSP 1309.

GAGE.--Water-stage recorder. Datum of gage is 2,049.78 ft (624.773 m) National Geodetic Vertical Datum of 1929. Prior to June 21, 1957, nonrecording gage at site 13 ft (4 m) upstream at same datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years (water years 1939-40, 1948-81), 66.5 ft³/s (1.883 m³/s), 48,180 acre-ft/yr (59.4 hm³/s); median of yearly mean discharges, 57 ft³/s (1.61 m³/s), 41,300 acre-ft/yr (51 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,430 ft³/s (154 m³/s) Mar. 31, 1952, gage height, 13.08 ft (3.987 m); maximum gage height, 13.5 ft (4.11 m) Mar. 25, 1950, from floodmark (backwater from ice); no flow Jan. 10 to Feb. 15, 1949, Aug. 19 to Sept. 14, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 711 ft³/s (20.1 m³/s) July 2, gage height, 4.20 ft (1.280 m), no other peak above base of 250 ft³/s (7.08 m³/s); minimum daily discharge, 8.7 ft³/s (0.25 m³/s) Sept. 6.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 13 to Nov. 24; stage-discharge relation affected by ice Nov. 25 to Feb. 16)

0.60	7.6	1.2	38	2.5	208
.80	15	1.5	63	3.0	318
1.0	25	2.0	123	4.0	616

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	12	23	15	20	16	40	53	23	60	15	23	10
2	12	23	10	18	16	39	49	22	50	600	21	9.4
3	12	23	12	16	16	39	47	22	35	550	20	9.0
4	12	22	15	16	17	39	45	23	30	400	20	8.9
5	13	22	16	17	19	37	43	24	25	200	22	9.1
6	13	22	15	18	20	37	40	24	23	100	24	8.7
7	13	22	14	18	19	36	38	23	24	60	23	10
8	13	22	13	17	17	35	39	25	22	35	23	12
9	13	21	13	17	15	36	40	25	22	27	23	12
10	13	21	14	16	13	35	37	24	22	25	22	11
11	12	21	15	16	15	35	35	23	21	23	21	10
12	13	21	16	17	25	34	33	24	21	21	21	9.0
13	13	22	17	19	35	34	35	26	21	20	21	8.8
14	14	22	19	19	45	34	37	25	21	17	21	9.0
15	15	23	19	18	60	35	35	23	22	16	23	9.4
16	23	23	19	15	70	34	33	25	22	16	32	10
17	34	23	20	16	99	33	33	29	21	16	30	11
18	35	23	17	18	127	33	31	34	20	18	24	11
19	29	22	15	19	134	34	30	38	19	23	21	11
20	25	21	15	18	120	34	31	36	19	19	18	10
21	23	22	16	18	95	35	31	31	18	17	16	10
22	20	22	17	18	67	35	32	33	17	18	15	11
23	20	21	15	21	53	35	33	35	17	19	13	11
24	20	21	14	25	46	35	32	31	17	17	13	11
25	20	18	14	24	45	35	30	30	16	19	14	12
26	21	16	15	22	43	34	30	29	13	22	14	13
27	21	17	17	21	42	34	28	27	12	27	14	14
28	22	17	20	20	41	38	26	27	11	33	14	15
29	22	18	22	19	---	47	25	27	10	33	13	15
30	24	17	21	20	---	54	23	31	11	30	12	16
31	23	---	20	18	---	57	---	30	---	26	11	---
TOTAL	575	631	500	574	1330	1152	1054	849	662	2462	602	327.3
MEAN	18.5	21.0	16.1	18.5	47.5	37.2	35.1	27.4	22.1	79.4	19.4	10.9
MAX	35	23	22	25	134	57	53	38	60	600	32	16
MIN	12	16	10	15	13	33	23	22	10	15	11	8.7
AC-FT	1140	1250	992	1140	2640	2280	2090	1680	1310	4880	1190	649

CAL YR 1980 TOTAL 12950.7 MEAN 35.4 MAX 187 MIN 1.9 AC-FT 25690
WTR YR 1981 TOTAL 10718.3 MEAN 29.4 MAX 600 MIN 8.7 AC-FT 21260

06466700 LEWIS AND CLARK LAKE AT SPRINGFIELD, SD

STAGE RECORDS

LOCATION.--Lat 42°51'21", long 97°53'06", in SW¼NE¼SW¼ sec.24, T.93 N., R.60 W., Bon Homme County, Hydrologic Unit 10170101, on left bank at east edge of Springfield at mile 832.20 (1,339.0 km).

PERIOD OF RECORD.--August 1967 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,200.00 ft (365.760 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Stage regulated by Gavins Point Dam 21.2 m (34.1 km) downstream. Prior to Oct. 1, 1980, gage heights in files of Corps of Engineers.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	8.72	8.81	8.07	8.85	7.91	6.31	7.50	7.71	7.34	8.07	8.70	8.67
2	8.62	8.79	8.18	8.76	7.80	6.31	7.47	7.73	7.45	8.24	8.77	8.74
3	8.58	8.72	8.30	8.70	7.17	6.31	7.38	7.59	7.43	8.32	8.85	8.75
4	8.65	8.79	8.30	8.34	7.20	6.28	7.30	7.59	7.46	8.27	8.96	8.83
5	8.76	8.80	8.20	8.06	7.25	---	7.28	7.61	7.31	8.28	8.97	8.85
6	8.83	8.76	8.34	8.09	7.41	---	7.25	7.70	7.34	8.19	8.98	8.81
7	8.93	8.71	8.43	8.15	7.70	---	7.26	7.74	7.24	8.09	8.96	8.85
8	8.89	8.64	8.46	8.19	7.65	---	7.37	7.70	7.25	8.03	8.67	8.84
9	8.80	8.60	8.44	8.20	7.59	---	7.51	7.67	7.28	8.09	8.52	8.79
10	8.58	8.65	8.49	8.18	7.71	---	7.58	7.61	7.39	7.91	8.37	8.80
11	8.56	8.78	8.40	8.03	7.67	---	7.60	7.60	7.48	7.83	8.30	8.80
12	8.70	9.02	8.35	8.00	7.80	---	7.63	7.72	7.65	7.86	8.47	8.73
13	8.76	8.97	8.34	8.08	7.98	---	7.64	7.69	7.76	7.83	8.61	8.80
14	8.77	8.88	8.35	8.23	8.16	---	7.68	7.69	7.90	7.80	8.70	8.77
15	9.01	8.66	8.30	8.40	8.36	---	7.67	7.62	7.83	7.92	8.73	8.66
16	9.14	8.89	8.40	8.48	8.42	---	7.59	7.56	7.64	7.98	8.69	8.72
17	8.91	8.90	8.49	8.38	8.46	---	7.54	7.84	7.49	8.03	8.65	8.77
18	8.89	8.93	8.45	8.41	8.39	6.62	7.57	7.71	7.16	8.04	8.66	8.78
19	8.85	8.95	8.57	8.58	8.26	6.79	7.51	7.50	7.09	8.17	8.73	8.78
20	8.84	8.90	8.32	8.70	8.14	7.02	7.51	7.45	7.02	8.20	8.76	8.81
21	8.92	9.06	8.11	8.80	7.89	7.35	7.47	7.47	7.35	8.22	8.84	8.70
22	9.01	9.01	8.22	8.83	7.62	7.50	7.44	7.46	7.67	8.37	8.87	8.80
23	8.83	8.92	8.41	8.87	7.28	7.63	7.43	7.23	7.71	8.51	8.96	8.83
24	8.90	8.76	8.31	8.90	6.96	7.78	7.38	7.15	7.82	8.61	8.90	8.83
25	8.88	8.70	8.16	8.90	6.59	7.80	7.36	7.18	7.63	8.68	8.85	8.78
26	8.88	8.61	8.29	8.90	6.32	7.77	7.39	7.24	7.61	8.79	8.78	8.63
27	8.79	8.52	8.50	8.87	6.37	7.86	7.47	7.28	7.63	8.91	8.83	8.73
28	8.71	8.20	8.66	8.79	6.40	7.61	7.55	7.22	7.70	8.87	8.80	8.87
29	8.83	8.17	8.68	8.62	---	7.69	7.50	7.21	7.71	8.71	8.74	8.84
30	8.91	8.05	8.70	8.38	---	7.69	7.61	7.32	7.76	8.69	8.76	8.89
31	8.83	---	8.81	8.15	---	7.50	---	7.35	---	8.64	8.61	---
TOTAL	273.18	262.35	260.03	262.82	212.06	---	224.44	233.14	225.17	256.15	270.94	263.45
MEAN	8.81	8.75	8.39	8.48	7.57	---	7.48	7.52	7.51	8.26	8.74	8.78
MAX	9.14	9.06	8.81	8.90	8.46	---	7.68	7.84	7.90	8.91	8.98	8.89
MIN	8.56	8.05	8.07	8.00	6.32	---	7.25	7.15	7.02	7.80	8.30	8.63

06467000 LEWIS AND CLARK LAKE NEAR YANKTON, SD

LOCATION.--Lat 42°50'56", long 97°28'54", in SW¼ sec.7, T.33 N., R.1 W., Cedar County, NE, Hydrologic Unit 10170101, in powerhouse of Gavins Point Dam on Missouri River, 3.75 mi (6.0 km) southwest of Yankton, 13.6 mi (21.9 km) upstream from James River, 32.5 mi (52.3 km) downstream from Niobrara River, and at mile 811.0 (1,304.9 km).

DRAINAGE AREA.--279,500 mi^2 (723,900 km^2), approximately.

PERIOD OF RECORD.--July 1955 to current year (monthend contents only). Prior to October 1955, published as Gavins Point Reservoir near Yankton.

GAGE.--Water-stage recorder. Datum of gage is National Geodetic Vertical Datum of 1929. Prior to Dec. 9, 1955, recorder at temporary location on wall of intake structure unit 3.

REMARKS.--Reservoir is formed by earthfill dam; storage began in July 1955. Maximum capacity, 517,000 acre-ft (637 hm^3) below elevation 1,210.0 ft (368.81 m), top of spillway gates. Normal maximum, 455,000 acre-ft (561 hm^3) below elevation 1,208.0 ft (368.20 m). Inactive storage, 163,000 acre-ft (201 hm^3) below elevation 1,195.0 ft (364.24 m). Dead storage, 26,000 acre-ft (32.1 hm^3) below elevation 1,180.0 ft (359.66 m) crest of spillway. From capacity, table put into use May 1, 1981: Maximum capacity, 504,000 acre-ft (621 hm^3). Normal maximum, 443,000 acre-ft (546 hm^3). Inactive storage, 157,000 acre-ft (194 hm^3). Dead storage, 23,000 acre-ft (28.4 hm^3). Figures given herein represent elevations at powerhouse and total contents adjusted for wind effect.

The spillway consists of 14 taintor gates, each 40 ft (12.2 m) wide by 30 ft (9.1 m) high; spillway capacity, 280,000 ft^3/s (7,930 m^3/s) at pool elevation 1,210.0 ft (368.81 m). Crest of spillway is at elevation 1,180.0 ft (359.66 m). Normal releases are through 3 power units, intallation completed in January 1957; maximum release through power units is 35,000 ft^3/s (991 m^3/s) at pool elevation, 1,210.0 ft (368.81 m). Water is used for flood control, navigation, power, and incidental uses.

COOPERATION.--Elevations and contents furnished by Corps of Engineers.

EXTREMES FOR PERIOD OF RECORD.--Maximum contents, 565,000 acre-ft (697 hm^3) Apr. 1, 1960, affected by wind; minimum since initial filling, 61,950 acre-ft (76.4 hm^3) Apr. 23, 1956.

EXTREMES FOR CURRENT YEAR.--Period of Oct. 1 to Apr. 30: Maximum contents, 479,000 acre-ft (591 hm^3) Jan. 1; minimum, 373,000 acre-ft (460 hm^3) Apr. 7. Period of May 1 to Sept. 30: Maximum contents, 454,000 acre-ft (560 hm^3) Aug. 6; minimum, 363,000 acre-ft (448 hm^3) June 10.

CORRECTIONS.--Capacity and storage figures in the REMARKS paragraph are in error for some years. The following table gives the correct figures for water years 1956-80.

Date	Maximum capacity	Normal maximum	Inactive storage	Dead storage
July 1955 to Dec. 31, 1967	541,000	477,000	156,000	18,000
Jan. 1, 1968 to Feb. 28, 1971	536,000	473,000	173,000	28,000
Mar. 1, 1971 to Dec. 31, 1975	522,000	460,000	165,000	26,000
Jan. 1, 1976 to Sept. 30, 1980	517,000	455,000	163,000	26,000

Elevations shown in EXTREMES FOR PERIOD OF RECORD and EXTREMES FOR CURRENT YEAR, for water years 1956-80, may have been incorrectly computed and may be slightly in error.

MONTHEND ELEVATION, IN FEET NGVD, AND CONTENTS,
IN ACRE-FEET, AT 2400, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

Date	Elevation	Contents	Change in contents
Sept. 30	1207.84	449000	
Oct. 31	1208.15	458000	+9000
Nov. 30	1207.90	454000	-4000
Dec. 31	1208.71	475000	+21000
CAL YR 1980			+12000
Jan. 31	1207.99	454000	-21000
Feb. 28	1205.75	390000	-64000
Mar. 31	1206.01	394000	+4000
Apr. 30	1205.34	379000	-15000
Apr. 30	1205.34	*369000	-10000
May 31	1205.46	371000	+2000
June 30	1205.97	387000	+16000
July 31	1207.80	441000	+54000
Aug. 31	1207.92	439000	-2000
Sept. 30	1208.22	447000	+8000
WTR YR 1981			-2000

NOTE.--Reservoir frozen over Dec. 10 to Mar. 10.
*New capacity table put into use May 1, 1981.

06467500 MISSOURI RIVER AT YANKTON, SD

LOCATION.--Lat 42°51'58", long 97°23'37", in SW¼SW¼ sec.18, T.93 N., R.55 W., Yankton County, Hydrologic Unit 10170101, near left bank in downstream end of left pier of Meridian Highway Bridge on U.S. Highway 81, 5.2 mi (8.4 km) downstream from Gavins Point Dam, 6.0 mi (9.7 km) upstream from James River, and at mile 805.8 (1,296.5 km).

DRAINAGE AREA.--279,500 mi² (723,900 km²), approximately.

PERIOD OF RECORD.--October 1930 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at same site March 1873 to November 1886, March 1905 to May 1908 (fragmentary), August 1921 to date (except winter months prior to 1932), are contained in reports of the U.S. Weather Bureau.

GAGE.--Water-stage recorder. Datum of gage is 1,139.68 ft (347.374 m) National Geodetic Vertical Datum of 1929. Prior to Sept. 20, 1932, nonrecording gage, and Sept. 20, 1932, to Mar. 9, 1967, water-stage recorder at present site and at datum 20.0 ft (6.096 m) higher.

REMARKS.--Records good. Flow completely regulated by Lewis and Clark Lake 5.2 mi (8.4 km) upstream since July 1955 (see station 06467000). Many diversions for irrigation and water supply above station. Corps of Engineers gage-height telemeter at station. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--51 years, 26,430 ft³/s (748.5 m³/s), 19,150,000 acre-ft/yr (23.6 km³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 480,000 ft³/s (13,600 m³/s) Apr. 13, 1952; maximum gage height, 35.5 ft (10.82 m) Apr. 13, 14, 1952 (present datum); minimum daily discharge, 2,700 ft³/s (76.5 m³/s) Nov. 15, 16, 1940.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage known, 50.5 ft (15.39 m) Apr. 5, 1881 (ice jam), present datum.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 38,700 ft³/s (1,100 m³/s) Nov. 12, gage height, 18.75 ft (5.715 m); minimum daily discharge, 10,600 ft³/s (300 m³/s) Mar. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	37200	35500	17800	14700	14200	14500	32900	34900	32100	32600	30700	31000
2	37000	35400	17500	14700	14500	14500	33100	35300	32400	32600	30600	31300
3	37000	35400	17500	14900	14700	14600	33200	35300	32100	32400	30700	31200
4	37000	35200	17500	14800	14400	14600	32800	34900	31600	31500	30600	31500
5	36900	35400	17500	14700	14500	14600	33000	34300	31600	30800	30700	31600
6	36800	35400	17500	14700	14200	14700	33100	34000	32300	30800	30700	31600
7	36700	35300	17500	14700	14100	14700	33200	33900	32300	30800	30500	31300
8	36700	35300	17500	14700	14200	14700	33300	34200	32300	30800	30500	31000
9	36500	35300	17500	14700	14200	14800	33300	34100	32900	31200	30400	31000
10	36300	35600	17500	14500	14200	14800	33800	34200	33100	31700	30500	31300
11	36200	36400	17500	14500	14300	14800	34500	35100	33100	32200	30800	31600
12	36200	37200	17500	14600	14300	11000	34500	34500	32600	32800	31100	32000
13	36100	38500	17500	14600	14300	14800	34500	33900	32700	33200	31500	32000
14	36000	38400	17500	14500	14300	14800	34200	33400	32600	33200	32000	31900
15	35900	38400	17500	14400	14300	14800	33500	33200	30500	33500	31700	32100
16	35900	38300	17500	14400	14300	15800	33600	33200	27700	33400	31600	32400
17	35700	38300	17500	14500	14400	18400	33600	33900	26500	34000	31900	32700
18	35700	38300	15700	14500	14400	21000	33700	33500	27600	34100	31900	32800
19	35600	38300	15700	14500	14300	23700	33800	32700	29300	33800	32000	32800
20	35600	38100	15700	14400	14500	26600	33300	31300	29700	33900	31400	32800
21	35700	38300	15700	14400	14400	24300	33000	30900	30000	33900	31900	32800
22	35800	38300	15900	14400	14300	32000	33400	30600	30100	34000	31800	32800
23	35600	38300	15800	14400	14400	35100	33800	30200	30600	33500	31800	32800
24	35500	36300	15800	14400	14500	35200	33900	30200	31000	33000	31700	32900
25	35300	32200	15800	14300	14700	35200	33900	30200	31200	32900	31800	32600
26	35700	29200	15800	14300	14600	35600	33900	30400	31700	32400	31400	32100
27	35500	26500	15800	14300	14500	36300	34000	31000	32100	31700	31000	32000
28	35100	24300	15600	14400	14400	35800	33900	31300	32600	31400	30600	32100
29	34500	21400	15600	14500	---	35700	34400	31300	32500	31400	30700	32100
30	34500	18900	15400	14500	---	35900	34500	31400	32900	31400	31100	32100
31	34700	---	15400	14400	---	33900	---	31400	---	31100	31000	---
TOTAL	1114900	1037700	517500	450300	402400	702200	1009600	1018700	940300	1006000	967100	960200
MEAN	35960	34590	16690	14530	14370	22650	33650	32860	31340	32450	31200	32010
MAX	37200	38500	17800	14900	14700	36300	34500	35300	33100	34100	32000	32900
MIN	34500	18900	15400	14300	14100	11000	32800	30200	26500	30800	30400	31000
AC-FT	2211000	2058000	1026000	893200	798200	1393000	2003000	2021000	1865000	1995000	1918000	1905000

CAL YR 1980 TOTAL 10300300 MEAN 28140 MAX 38500 MIN 11000 AC-FT 20430000
WTR YR 1981 TOTAL 10126900 MEAN 27740 MAX 38500 MIN 11000 AC-FT 20090000

BEST DOCUMENT AVAILABLE

06471000 JAMES RIVER AT COLUMBIA, SD

LOCATION.--Lat 45°37'05", long 98°19'30", in NE¼NW¼ sec.29, T.125 N., R.62 W., Brown County, Hydrologic Unit 10160003, on left bank 10 ft (3 m) downstream from highway bridge, 0.8 mi (1.3 km) northwest of Columbia, 2.4 mi (3.9 km) upstream from Chicago and North Western Transportation Company bridge, 3.6 mi (5.8 km) upstream from Elm River, and 9.4 mi (15.1 km) downstream from Columbia Road Dam.

DRAINAGE AREA.--7,050 mi² (18,300 km²), approximately, of which about 3,000 mi² (7,770 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,275.01 ft (388.623 m) National Geodetic Vertical Datum of 1929. Prior to Oct. 5, 1957, nonrecording gage at same site and datum.

REMARKS.--Records fair, except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 168 mi (270 km) upstream since May 1953.

AVERAGE DISCHARGE.--36 years, 107 ft³/s (3.030 m³/s), 77,520 acre-ft/yr (95.6 hm³/yr); median of yearly mean discharges, 62 ft³/s (1.76 m³/s), 44,900 acre-ft/yr (55 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,420 ft³/s (153 m³/s) May 24, 25, 1950, gage height, 16.89 ft (5.148 m), from graph based on gage readings; maximum gage height, 17.09 ft (5.209 m) Apr. 22, 1969; maximum daily reverse flow, 1,860 ft³/s (52.7 m³/s) Apr. 8, 1952, backwater from Elm River.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 98 ft³/s (2.78 m³/s) at 1630 hours, Apr. 6; maximum gage height, 7.36 ft (2.243 m), backwater from ice; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	37	37	27	11	1.6	78	.77	.00	.00	.00	.45
2	.00	37	35	27	10	1.7	88	.14	.00	.00	.00	.40
3	.00	38	35	26	9.8	1.8	84	.00	.00	.00	.00	.28
4	.00	37	35	25	9.2	1.9	80	.00	.00	.00	.00	.24
5	.00	37	34	24	8.5	2.0	91	.00	.00	.00	.00	.14
6	.00	37	33	23	8.2	2.2	96	.00	.00	.00	.00	.05
7	.00	39	33	23	7.9	2.4	81	.00	.00	.00	.00	.09
8	.00	41	32	23	7.0	2.7	70	.00	.00	.00	.00	.09
9	.50	40	32	23	5.0	3.1	56	.00	.00	.00	.00	.00
10	1.3	39	32	23	2.7	3.4	33	.00	.00	.00	5.4	.00
11	1.6	39	33	23	1.0	3.9	19	.00	.00	.00	8.7	.00
12	2.6	39	34	24	.95	4.5	14	.00	.00	.00	10	.00
13	3.4	39	34	25	.97	5.4	11	.00	.00	.00	11	.00
14	3.4	44	34	26	1.0	6.6	10	.00	.00	.00	12	.00
15	8.7	51	34	26	1.1	8.3	6.3	.00	.73	.00	9.2	.00
16	18	53	33	25	1.2	10	4.3	.00	1.4	9.6	5.4	.00
17	23	54	32	25	1.3	14	3.0	.00	.38	22	3.9	.00
18	31	56	32	24	1.5	14	1.8	.00	.14	17	4.5	.00
19	39	57	32	24	1.6	14	1.5	.00	.09	9.2	3.7	.00
20	41	57	30	23	1.7	13	1.3	.00	.01	6.9	3.5	.00
21	41	57	29	23	1.8	14	1.5	.00	.00	6.0	3.0	.00
22	34	58	27	22	1.8	14	2.0	.00	.00	4.5	3.8	.00
23	31	58	26	21	1.7	16	1.7	.00	.00	4.5	4.3	.00
24	29	58	24	19	1.6	17	1.2	.00	.00	5.2	3.5	.00
25	29	58	24	18	1.6	18	.86	.00	.00	4.5	2.2	.00
26	29	57	25	17	1.5	19	1.4	.00	.00	5.0	1.8	.00
27	31	57	26	16	1.5	20	1.4	.00	.00	6.0	1.1	.00
28	35	57	27	15	1.5	22	1.0	.00	.00	6.9	1.3	.00
29	40	56	27	14	---	25	1.0	.00	.00	4.3	.68	.00
30	42	48	27	13	---	25	.95	.00	.00	1.3	.45	.00
31	40	---	27	12	---	24	---	.00	---	.00	.43	---
TOTAL	554.50	1435	955	679	104.62	330.5	842.21	.91	2.75	112.90	99.86	1.74
MEAN	17.9	47.8	30.8	21.9	3.74	10.7	28.1	.029	.092	3.64	3.22	.058
MAX	42	58	37	27	11	25	96	.77	1.4	22	12	.45
MIN	.00	37	24	12	.95	1.6	.86	.00	.00	.00	.00	.00
AC-FT	1100	2850	1890	1350	208	656	1670	1.8	5.5	224	198	3.5

CAL YR 1980 TOTAL 8811.11 MEAN 24.1 MAX 291 MIN .00 AC-FT 17480
WTR YR 1981 TOTAL 5118.99 MEAN 14.0 MAX 96 MIN .00 AC-FT 10150

06471000 JAMES RIVER AT COLUMBIA, SD--Continued
(National stream-quality accounting network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-64, 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1966 to September 1979.
WATER TEMPERATURES: October 1966 to September 1978.

REMARKS.--No flow Oct. 1-8, May 2 to June 14, June 21 to July 15, July 31 to Aug. 9, Sept. 9-30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,500 micromhos Mar. 1, 1974, Jan. 27-29, Jan. 31, 1979; minimum daily, 240 micromhos Mar. 17, 1972.
WATER TEMPERATURES: Maximum daily, 32.0°C June 29, July 10, 1970; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
NOV										
20...	1445	57	--	--	--	2.4	--	K10	227	300
JAN										
13...	1330	25	1280	7.4	.0	3.1	14.5	K10	K13	440
MAR										
04...	1500	1.9	870	8.7	.5	1.8	--	ND	K10	280
APR										
02...	1000	89	760	--	7.0	--	--	--	--	--
JUN										
17...	1250	.20	1360	--	16.0	--	--	--	--	--
JUL										
22...	1300	4.4	900	7.4	26.5	8.5	8.7	K500	K370	340
AUG										
19...	1300	3.7	1140	7.2	23.5	5.9	8.5	460	230	330

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
NOV										
20...	0	66	33	72	33	1.8	15	110	320	36
JAN										
13...	43	95	50	110	34	2.3	19	220	400	52
MAR										
04...	25	59	31	74	36	1.9	10	140	250	37
APR										
02...	--	--	--	--	--	--	--	--	--	--
JUN										
17...	--	--	--	--	--	--	--	--	--	--
JUL										
22...	1.0	69	41	110	40	2.6	20	160	340	58
AUG										
19...	0	65	41	99	38	2.6	15	77	370	52

K Non-ideal colony count.
ND Not detected.

BEST DOCUMENT AVAILABLE

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
NOV 20...	.2	18	572	546	.78	88.0	--	.68	.72	.100
JAN 13...	.4	27	839	815	1.1	56.6	--	.21	.22	.180
MAR 04...	.1	5.0	515	507	.70	2.6	--	.02	.00	.070
APR 02...	--	--	--	--	--	--	--	--	--	--
JUN 17...	--	--	--	--	--	--	--	--	--	--
JUL 22...	.2	19	705	683	.96	8.4	--	.03	.03	.060
AUG 19...	.2	19	675	591	.92	6.7	--	<.10	<.10	.100

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
NOV 20...	.13	.120	1.6	1.8	1.7	.20	1.90	2.4	2.6	12
JAN 13...	.23	.150	2.1	3.2	2.3	1.0	3.30	2.5	3.5	16
MAR 04...	.09	.040	1.7	1.7	1.8	.00	1.70	1.8	1.7	7.5
APR 02...	--	--	--	--	--	--	--	--	--	--
JUN 17...	--	--	--	--	--	--	--	--	--	--
JUL 22...	.08	.050	1.6	2.1	1.7	.40	2.10	1.7	2.1	9.4
AUG 19...	.13	.060	1.7	2.3	1.8	.60	2.40	1.9	2.5	11

DATE	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
NOV 20...	--	.260	.260	.80	--	--	--	25	--
JAN 13...	--	.120	.210	.64	--	36	--	--	--
MAR 04...	--	.140	.200	.61	--	--	--	16	1300
APR 02...	--	--	--	--	--	--	--	--	--
JUN 17...	--	--	--	--	--	--	--	--	--
JUL 22...	--	.550	.690	2.1	--	4.4	.3	--	77000
AUG 19...	--	.420	.500	1.5	--	--	--	21	22000

< Less than.

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
NOV 20...	1445	57	79	12	--	--	--	--	95	98	100	--
JAN 13...	1330	25	117	7.9	--	--	--	--	--	--	--	--
MAR 04...	1500	1.9	47	.24	--	--	--	--	--	--	--	--
APR 02...	1000	89	--	--	--	--	--	--	--	--	--	--
JUN 17...	1250	.20	--	--	--	--	--	--	--	--	--	--
JUL 22...	1300	4.4	142	1.7	60	--	--	--	78	97	100	--
AUG 19...	1300	3.7	55	.55	71	--	--	--	91	100	--	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
JAN 13...	1330	5	1	4	0	0	2	0	0	0	1
JUL 22...	1300	11	1	10	0	--	<1	20	10	10	1

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
JAN 13...	--	<3	4	0	0	100	10	4	2	2	50
JUL 22...	0	1	5	4	1	430	20	0	0	1	880

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
JAN 13...	40	10	.1	.1	.0	0	0	0	20	0	20
JUL 22...	250	630	.3	.1	.2	0	0	0	30	10	20

< Less than.

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 20,80	MAR 4,81	JUL 22,81	AUG 19,81
TIME	1445	1500	1300	1300
TOTAL CELLS/ML	5600	1300	77000	22000
DIVERSITY: DIVISION	1.1	1.4	1.5	1.4
.CLASS	1.1	1.4	1.6	1.4
..ORDER	1.3	2.2	2.2	1.9
...FAMILY	1.4	2.8	2.9	2.4
....GENUS	1.4	3.0	3.6	2.9

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	540	2
...MICRACTINIACEAE								
....GOLENKINIA	--	-	--	-	470	1	--	-
....MICRACTINIUM	--	-	--	-	8400	11	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	100	2	100	8	1600	2	1700	8
....CHODATELLA	--	-	--	-	*	0	--	-
....CLOSTERIOPSIS	--	-	--	-	470	1	--	-
....DICTYOSPHAERIUM	--	-	--	-	2100	3	5100#	23
....FRANCEIA	--	-	--	-	*	0	--	-
....KIRCHNERIELLA	--	-	--	-	1400	2	600	3
....OOCYSTIS	--	-	--	-	1400	2	--	-
....SELENASTRUM	*	0	26	2	--	-	--	-
....TETRAEDRON	--	-	--	-	*	0	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	8400	11	--	-
....CRUCIGENIA	--	-	--	-	2800	4	--	-
....SCENEDESMUS	80	1	--	-	8900	12	1700	8
....TETRASTRUM	80	1	--	-	--	-	650	3
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	*	0	220#	17	1400	2	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	220	4	180	14	4900	6	650	3
..PENNALES								
...DIATOMACEAE								
....DIATOMA	--	-	65	5	--	-	--	-
...FRAGILARIACEAE								
....FRAGILARIA	--	-	13	1	--	-	--	-
....SYNEDRA	40	1	300#	23	--	-	490	2
...NAVICULACEAE								
....NAVICULA	*	0	13	1	*	0	--	-
...NITZSCHIACEAE								
....NITZSCHIA	1100#	20	220#	17	1400	2	160	1
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...MALLOMONADACEAE								
....MALLOMONAS	--	-	--	-	*	0	--	-
...SYNURACEAE								
....SYNURA	--	-	--	-	1400	2	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	--	-	*	0	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	13	1	470	1	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	--	-	--	-	--	-	6100#	27
....ANACYSTIS	3900#	70	140	11	14000#	18	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	15000#	20	3700#	17
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	1200	2	650	3
....TRACHELOMONAS	--	-	13	1	*	0	160	1

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06471000 JAMES RIVER AT COLUMBIA, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	810	950	1120	1320	690	800	1200	---	---	---	1020
2	---	810	950	1160	1220	770	750	1190	---	---	---	1120
3	---	800	1060	1100	1520	780	800	---	---	---	---	1060
4	---	800	1020	1100	1540	850	750	---	---	---	---	1100
5	---	800	1020	1100	1510	680	750	---	---	---	---	1060
6	---	800	1010	1050	1510	770	810	---	---	---	---	1090
7	---	810	1030	1160	1300	860	550	---	---	---	---	1030
8	---	800	1010	1160	1300	860	890	---	---	---	---	1050
9	950	810	1030	1140	1310	870	880	---	---	---	---	---
10	910	800	800	1070	770	1770	900	---	---	---	1160	---
11	870	800	1090	1120	1650	810	900	---	---	---	1120	---
12	870	810	1100	1200	980	740	900	---	---	---	1080	---
13	920	820	910	1280	1980	820	950	---	---	---	1090	---
14	850	830	1130	1270	1980	750	950	---	---	---	1100	---
15	850	810	1120	1270	1020	820	960	---	1460	---	1060	---
16	850	840	1130	1200	2000	880	960	---	1410	1160	1070	---
17	820	860	1150	1100	1300	520	810	---	1350	1160	1080	---
18	790	800	1120	1330	1300	550	960	---	1410	1120	1080	---
19	820	860	1080	1330	1450	520	560	---	1390	1130	1080	---
20	850	800	1120	1320	2000	510	580	---	1360	1120	1100	---
21	800	870	1100	1320	1710	500	1190	---	---	1180	1100	---
22	800	870	1190	1320	1980	1940	1180	---	---	1110	1080	---
23	800	860	1180	1320	1460	760	1200	---	---	1120	1060	---
24	800	860	1180	1320	1460	750	1190	---	---	1110	1060	---
25	790	880	1090	1320	630	1610	1170	---	---	1060	1060	---
26	790	900	1250	1300	650	870	1180	---	---	1100	1010	---
27	790	890	1100	1300	650	650	1180	---	---	1140	1100	---
28	790	920	1090	1310	650	1340	1200	---	---	1100	1040	---
29	790	900	1210	1320	---	830	1220	---	---	1140	1040	---
30	800	920	1250	1320	---	640	1220	---	---	1240	1040	---
31	800	---	1180	1360	---	550	---	---	---	---	1050	---
MEAN	830	839	1080	1230	1360	847	985	1200	1400	1140	1080	1070

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	---	4.0	.0	.5	.0	.0	3.0	10.0	---	---	---	19.0
2	---	5.0	.0	.0	.0	.0	3.0	14.0	---	---	---	20.0
3	---	7.0	.0	.0	.0	.0	3.0	---	---	---	---	19.0
4	---	5.0	.0	.0	.0	.0	2.0	---	---	---	---	15.0
5	---	3.0	.0	.0	.0	.0	2.0	---	---	---	---	17.0
6	---	5.0	.0	1.0	.0	.0	3.0	---	---	---	---	22.0
7	---	7.0	.0	.0	.0	.0	3.0	---	---	---	---	18.0
8	---	8.0	.0	.0	.0	.0	7.0	---	---	---	---	19.0
9	15.0	8.0	.0	.0	.0	.0	8.0	---	---	---	---	---
10	14.0	4.0	.0	.0	.0	.0	9.0	---	---	---	19.0	---
11	9.0	6.0	.0	.0	.0	1.0	8.0	---	---	---	20.0	---
12	7.0	6.0	.0	.0	.0	2.0	5.0	---	---	---	19.0	---
13	9.0	4.0	.0	.0	.0	2.0	7.0	---	---	---	22.0	---
14	8.0	3.0	.0	.0	1.0	2.0	4.0	---	---	---	22.0	---
15	9.0	.5	.0	.0	1.0	2.0	5.0	---	18.0	---	21.0	---
16	9.0	1.0	.0	.0	1.0	1.0	8.0	---	19.0	---	20.0	---
17	8.0	2.0	.0	.0	1.0	1.0	10.0	---	17.0	24.0	19.0	---
18	5.0	1.0	.0	.0	1.0	1.0	6.0	---	16.0	25.0	20.0	---
19	10.0	.0	.0	1.0	2.0	1.0	7.0	---	18.0	24.0	22.0	---
20	9.0	4.0	.0	.0	2.0	.0	5.0	---	17.0	22.0	22.0	---
21	8.0	1.0	.0	.0	2.0	.0	10.0	---	---	24.0	23.0	---
22	9.0	2.0	.0	1.0	2.0	.0	9.0	---	---	24.0	23.0	---
23	9.0	1.0	.0	1.0	1.0	1.0	8.0	---	---	24.0	21.0	---
24	4.0	.0	.0	1.0	1.0	2.0	9.0	---	---	23.0	20.0	---
25	4.0	1.0	.0	1.0	.0	2.0	14.0	---	---	23.0	21.0	---
26	1.0	2.0	.0	1.0	.0	1.0	15.0	---	---	20.0	23.0	---
27	2.0	.0	.0	.0	1.0	2.0	19.0	---	---	20.0	22.0	---
28	.0	.0	.0	.0	.0	2.0	16.0	---	---	18.0	19.0	---
29	4.0	1.0	1.0	.0	---	2.0	15.0	---	---	20.0	20.0	---
30	4.0	1.0	1.0	.0	---	3.0	14.0	---	---	22.0	22.0	---
31	2.0	---	1.0	1.0	---	3.0	---	---	---	24.0	22.0	---
MEAN	7.0	3.0	.0	.5	.5	1.0	8.0	12.0	17.5	22.5	21.0	18.5

06471200 MAPLE RIVER AT NORTH DAKOTA-SOUTH DAKOTA STATE LINE

LOCATION.--Lat 45°56'20", long 98°27'08", in SW¼SE¼ sec.33, T.129 N., R.62 W., Dickey County, ND, Hydrologic Unit 10160004, on left bank 0.4 mi (0.6 km) upstream from State line, 7.8 mi (12.6 km) northeast of Frederick, SD, and 15.7 mi (25.3 km) upstream from mouth.

DRAINAGE AREA.--750 mi² (1,940 km²), approximately, of which about 270 mi² (699 km²) is probably noncontributing.

PERIOD OF RECORD.--June 1956 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,365 ft (416 m), from topographic map. Prior to June 14, 1962, nonrecording gage at site 0.4 mi (0.6 km) downstream at datum 0.94 ft (0.287 m) lower.

REMARKS.--Records good. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--25 years, 19.3 ft³/s (0.547 m³/s), 13,980 acre-ft/yr (17.2 hm³/yr); median of yearly mean discharges, 10 ft³/s (0.28 m³/s), 7,240 acre-ft/yr (8.9 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,930 ft³/s (168 m³/s) Apr. 11, 1969; maximum gage height, 16.05 ft (4.892 m) Apr. 11, 1969 (backwater from ice); no flow for long periods in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 188 ft³/s (5.32 m³/s) at 1900 hours, July 17, gage height, 5.97 ft (1.820 m), no other peak above base of 50 ft³/s (1.416 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.5	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.1	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.4	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.0	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.8	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.5	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.4	.01
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.1	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.82	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.60	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.47	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.33	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.25	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.16	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	91	.04	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	148	.02	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	87	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	49	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	43	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	33	.16	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	25	3.3	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	20	13	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	17	2.0	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	14	.67	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	12	.33	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	8.8	.22	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	6.7	.11	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	4.8	.07	.00
31	.00	---	.00	.00	---	.00	---	.00	---	4.1	.07	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	563.40	39.60	.01
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	18.2	1.28	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	148	13	.01
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	1120	79	.02

CAL YR 1980 TOTAL 602.02 MEAN 1.64 MAX 30 MIN .00 AC-FT 1190
WTR YR 1981 TOTAL 603.01 MEAN 1.65 MAX 148 MIN .00 AC-FT 1200

06471500 ELM RIVER AT WESTPORT, SD

LOCATION.--Lat 45°39'22", long 98°29'48", in SW¼NW¼ sec.12, T.125 N., R.64 W., Brown County, Hydrologic Unit 10160004, on right bank 12 ft (3.7 m) downstream from highway bridge, 0.5 mi (0.8 km) north of Westport, 0.7 mi (1.1 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, 9.3 mi (15.0 km) downstream from Willow Creek, and 30.4 mi (48.9 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi² (4,350 km²), approximately, of which about 510 mi² (1,320 km²) is probably noncontributing.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,309.3 ft (399.07 m) National Geodetic Vertical Datum of 1929. Prior to Aug. 6, 1951, and Apr. 8 to Sept. 9, 1952, nonrecording gage 12 ft (3.7 m) upstream at same datum. Aug. 6, 1951, to Apr. 7, 1952, water-stage recorder at present site and datum.

REMARKS.--Records good. Flow regulated for Aberdeen municipal water supply by Elm Lake and other small reservoirs upstream, combined capacity, about 16,000 acre-ft (19.7 hm³). Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 45.8 ft³/s (1.297 m³/s), 33,180 acre-ft/yr (40.9 hm³/yr); median of yearly mean discharges, 22 ft³/s (0.62 m³/s), 15,900 acre-ft/yr (20 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,600 ft³/s (357 m³/s) Apr. 10, 1969, gage height, 22.11 ft (6.739 m); no flow for many days in most years prior to 1960.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 122 ft³/s (3.46 m³/s) at 0545 hours, July 20, gage height, 5.53 ft (1.686 m), no other peak above base of 100 ft³/s (2.83 m³/s); no flow June 21-25.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used June 5 to July 19, July 24 to Sept. 26)

3.97	0	4.3	3.2	4.7	23
4.0	.10	4.4	5.8	5.0	50
4.2	1.6	4.5	9.7	5.5	120

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.74	4.0	4.4	3.2	5.9	3.0	6.4	6.5	14	1.7	2.8	15
2	.54	4.1	4.6	3.2	5.4	2.6	5.7	9.0	6.5	3.4	2.5	14
3	.41	4.1	7.3	2.9	5.6	2.7	6.6	8.4	3.3	3.6	2.7	13
4	.37	3.7	7.4	3.1	5.4	2.7	7.1	7.6	2.4	3.2	2.6	12
5	.33	3.7	7.3	3.2	5.3	2.6	5.5	7.8	2.8	2.7	2.5	12
6	.53	3.9	6.9	3.8	5.4	2.5	6.1	7.9	2.0	2.5	2.5	13
7	.60	3.9	6.7	4.9	5.4	2.3	5.7	8.1	1.2	2.5	2.3	11
8	.51	3.6	6.6	4.9	4.6	2.3	5.5	7.8	1.4	1.7	2.5	10
9	.42	3.3	6.9	5.0	5.0	2.3	5.4	6.5	.85	1.4	2.5	11
10	.65	3.2	6.3	5.0	4.7	2.1	5.5	7.1	.78	1.4	2.4	10
11	1.1	3.5	6.6	5.0	4.0	2.1	3.6	7.3	.65	1.3	2.3	9.7
12	2.2	3.7	7.3	5.5	4.5	2.0	3.1	7.5	.57	2.0	2.2	9.2
13	9.4	3.4	7.0	5.7	5.3	1.3	3.4	7.4	1.1	1.4	2.1	9.2
14	21	3.4	7.2	5.6	6.0	1.2	2.8	7.3	.66	1.2	2.0	8.2
15	25	3.4	7.2	5.3	6.9	1.2	2.3	7.1	.47	1.0	1.9	15
16	23	3.4	7.1	5.2	6.6	.79	2.4	7.1	.15	.84	1.9	11
17	17	3.3	8.0	5.5	6.5	.55	2.7	6.5	.32	.70	1.9	7.9
18	33	3.3	7.2	5.5	7.2	.45	2.8	6.9	.31	.56	2.0	7.4
19	32	3.3	9.4	5.7	7.9	.56	2.3	6.6	.25	4.3	14	7.0
20	29	3.5	7.3	5.5	6.8	1.6	2.1	6.7	.10	113	17	6.6
21	25	3.6	7.2	5.6	5.8	2.1	2.4	6.9	.00	89	16	6.1
22	24	4.8	7.0	5.1	5.0	2.1	2.2	6.2	.00	66	18	5.7
23	24	4.9	5.5	2.0	4.6	2.1	1.9	5.9	.00	48	21	5.4
24	23	4.7	1.6	1.9	4.3	2.6	2.0	5.8	.00	34	27	4.9
25	15	4.8	1.5	2.3	3.9	2.8	2.2	5.5	.00	21	27	4.7
26	12	5.0	1.6	6.4	3.8	2.5	1.8	5.2	.03	16	25	4.6
27	12	5.0	1.6	7.0	3.9	4.3	1.4	5.5	1.0	13	33	3.6
28	12	5.4	1.8	7.0	3.3	5.0	5.6	6.8	1.1	11	24	3.6
29	11	4.8	1.6	6.9	---	5.3	6.7	5.3	1.6	7.3	19	3.5
30	5.3	5.2	1.7	6.9	---	4.5	6.1	.93	1.6	4.6	17	3.6
31	4.0	---	1.8	6.8	---	6.2	---	12	---	3.0	16	---
TOTAL	365.10	119.9	171.6	151.6	149.2	76.35	119.3	213.13	45.14	464.10	315.6	257.9
MEAN	11.8	4.00	5.54	4.89	5.33	2.46	3.98	6.88	1.50	15.0	10.2	8.60
MAX	33	5.4	9.4	7.0	7.9	6.2	7.1	12	14	113	33	15
MIN	.33	3.2	1.5	1.9	3.3	.45	1.4	.93	.00	.56	1.9	3.5
AC-FT	724	238	340	301	296	151	237	423	90	921	626	512

CAL YR 1980 TOTAL 2606.79 MEAN 7.12 MAX 34 MIN .33 AC-FT 5170
WTR YR 1981 TOTAL 2449.12 MEAN 6.71 MAX 113 MIN .00 AC-FT 4860

06473000 JAMES RIVER AT ASHTON, SD

LOCATION.--Lat 44°59'54", long 98°28'50", in NW¼NW¼NE¼ sec.36, T.118 N., R.64 W., Spink County, Hydrologic Unit 10160006, on right bank at downstream side of highway bridge, 0.9 mi (1.4 km) east of Ashton, 6.1 mi (9.8 km) upstream from Snake Creek, and 14.2 mi (22.8 km) upstream from Turtle Creek.

DRAINAGE AREA.--11,000 mi² (28,500 km²), approximately, of which about 4,190 mi² (10,900 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1945 to current year.

REVISED RECORDS.--WSP 1209: 1947.

GAGE.--Water-stage recorder. Datum of gage is 1,244.4 ft (379.29 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 26, 1957, nonrecording gage at present site and Nov. 26, 1957, to Oct. 7, 1974, water-stage recorder at site 900 ft (274 m) upstream all at present datum.

REMARKS.--Records good except those for winter periods, which are poor. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 285 mi (459 km) upstream since May 1953. Occasional backwater and reverse flow caused by Snake Creek during most years. Several observations of specific conductance were made during the year.

AVERAGE DISCHARGE.--36 years, 156 ft³/s (4.418 m³/s), 113,000 acre-ft/yr (139 hm³/yr); median of yearly mean discharges, 100 ft³/s (2.83 m³/s), 72,400 acre-ft/yr (89 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,680 ft³/s (161 m³/s) Apr. 24, 1969, gage height, 20.63 ft (6.288 m); maximum gage height, 21.17 ft (6.453 m) Apr. 13, 1969 (backwater from Snake Creek); maximum daily reverse flow, 2,100 ft³/s (59.5 m³/s) Apr. 9, 1969 (backwater from Snake Creek).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 68 ft³/s (1.93 m³/s) at 1900 hours, Apr. 16, gage height, 4.13 ft (1.259 m); maximum gage height, 4.93 ft (1.503 m) Dec. 1 (backwater from ice); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	33	19	10	5.2	14	8.3	.00	.00	.00	.00
2	.00	.00	30	17	9.0	5.4	11	8.0	.00	.00	.00	.00
3	.00	.00	28	15	6.0	5.8	12	9.1	.00	.00	.00	.00
4	.00	.00	30	17	7.0	6.6	10	8.5	.00	.00	.00	.00
5	.00	.00	29	19	6.0	7.0	9.1	7.6	.00	.00	.00	.00
6	.00	.00	27	18	5.2	7.2	8.7	6.7	.00	.00	.00	.00
7	.00	.00	25	17	4.8	7.6	9.3	5.8	.00	.00	.00	.00
8	.00	.00	24	16	4.1	8.2	9.3	5.4	.00	.00	.00	.00
9	.00	.00	23	15	3.6	9.1	9.8	7.5	.00	.00	.00	.00
10	.00	.00	23	13	3.3	10	12	6.4	.05	.00	.00	.00
11	.00	.00	23	13	3.2	11	16	6.3	.00	.00	.00	.00
12	.00	.00	24	13	3.0	12	29	5.9	.03	.00	.00	.00
13	.00	.00	25	14	3.0	13	46	4.9	.05	.00	.00	.00
14	.00	.00	25	14	3.5	13	58	3.4	.00	.00	.00	.00
15	.00	.00	26	13	3.8	15	65	1.8	.08	.00	.00	.00
16	.00	3.5	28	11	3.9	15	66	1.2	.17	.00	.00	.00
17	.00	18	29	11	4.0	14	63	2.1	.27	.00	.00	.00
18	.00	21	30	12	4.2	12	60	2.0	.32	.00	.00	.00
19	.00	24	29	12	4.4	12	56	.54	.47	.00	.00	.00
20	.00	26	26	12	4.2	15	50	.00	.48	.00	.00	.00
21	.00	27	22	12	3.8	16	44	.00	.55	.00	.00	.00
22	.00	27	20	12	3.4	15	40	.00	.51	.00	.00	.00
23	.00	29	17	12	3.1	14	34	.00	.56	.00	.00	.00
24	.00	28	15	13	2.9	14	29	.00	.58	.00	.00	.00
25	.00	28	13	13	3.5	12	25	.00	.54	.00	.00	.00
26	.00	32	14	13	4.2	11	21	.00	.56	.00	.00	.00
27	.00	32	15	13	5.6	8.9	17	.00	.55	.00	.00	.00
28	.00	34	16	12	5.5	7.4	15	.00	.52	.00	.00	.00
29	.00	34	17	12	---	9.3	12	.00	.14	.00	.00	.00
30	.00	34	19	12	---	9.8	9.4	.00	.00	.00	.00	.00
31	.00	---	20	11	---	11	---	.00	---	.00	.00	---
TOTAL	.00	397.50	725	426	130.2	332.5	860.6	101.44	6.43	.00	.00	.00
MEAN	.000	13.3	23.4	13.7	4.65	10.7	28.7	3.27	.21	.000	.000	.000
MAX	.00	34	33	19	10	16	66	9.1	.58	.00	.00	.00
MIN	.00	.00	13	11	2.9	5.2	8.7	.00	.00	.00	.00	.00
AC-FT	.00	788	1440	845	258	660	1710	201	13	.00	.00	.00

CAL YR 1980 TOTAL 10666.17 MEAN 29.1 MAX 243 MIN .00 AC-FT 21160
WTR YR 1981 TOTAL 2979.67 MEAN 8.16 MAX 66 MIN .00 AC-FT 5910

06473000 JAMES RIVER AT ASHTON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1978.

PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: October 1977 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
WATER TEMPERATURES: Maximum daily, 28.0°C July 3, 1978; minimum daily, 0.0°C on several days during November to December 1978.

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0							---	23.0	26.0		
2	11.0							---	22.0	24.0		
3	11.0							---	23.0	25.0		
4	14.0							---	---	---		
5	---							---	---	---		
6	17.0							---	---	27.0		
7	16.0							---	---	27.0		
8	17.0							---	20.0	19.0		
9	16.0							---	21.0	---		
10	16.0							---	22.0	---		
11	15.0							14.0	20.0	---		
12	---							13.0	20.0	---		
13	---							14.0	22.0	---		
14	14.0							17.0	---	---		
15	13.0							16.0	18.0	---		
16	10.0							15.0	18.0	---		
17	8.0							---	20.0	---		
18	7.0							16.0	18.0	---		
19	---							16.0	18.0	---		
20	11.0							17.0	20.0	---		
21	9.0							18.0	---	---		
22	6.0							19.0	20.0	---		
23	6.0							18.0	22.0	---		
24	4.0							---	22.0	---		
25	2.0							---	22.0	---		
26	---							17.0	21.0	---		
27	3.0							18.0	---	---		
28	.0							19.0	---	---		
29	4.0							20.0	23.0	---		
30	---							19.0	23.0	---		
31	---							---	---	---		
MEAN	10.0							17.0	21.0	24.5		

BEST DOCUMENT AVAILABLE

06473750 WOLF CREEK NEAR REE HEIGHTS, SD

LOCATION.--Lat 44°36'25", long 99°13'54", in SW¼SW¼ sec.11, T.113 N., R.70 W., Hand County, Hydrologic Unit 10160009, near right bank on downstream side of highway bridge, 0.3 mi (0.5 km) downstream from small left-bank tributary, 6.5 mi (10.5 km) north of Ree Heights, and 13.8 mi (22.2 km) upstream from Lake Louise dam.

DRAINAGE AREA.--265 mi² (686 km²), approximately.

PERIOD OF RECORD.--September 1959 to September 1981 (discontinued).

GAGE.--Water-stage recorder. Datum of gage is 1,614.16 ft (491.996 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good. Flow regulated by small reservoir 0.5 mi (0.8 km) upstream, capacity, about 1,100 acre-ft (1.36 hm³).

AVERAGE DISCHARGE.--22 years, 3.73 ft³/s (0.106 m³/s), 2,700 acre-ft/yr (3.33 hm³/yr); median of yearly mean discharges, 0.10 ft³/s (0.003 m³/s), 72 acre-ft/yr (0.09 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 990 ft³/s (28.0 m³/s) Apr. 5, 1969, gage height, 9.33 ft (2.844 m); maximum gage height, 9.57 ft (2.917 m) Mar. 14, 1966 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--No flow during year. No peak above base of 40 ft³/s (1.13 m³/s).

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

No flow during year

06474000 TURTLE CREEK NEAR TULARE, SD

LOCATION.--Lat 44°44'06", long 98°35'09", in SE¼SE¼ sec.25, T.115 N., R.65 W., Spink County, Hydrologic Unit 10160009, on left bank at downstream side of highway bridge, 3.9 mi (6.3 km) west of Tulare and 8.9 mi (14.3 km) downstream from Wolf Creek.

DRAINAGE AREA.--1,120 mi² (2,900 km²), approximately.

PERIOD OF RECORD.--August 1953 to September 1956, September 1965 to September 1981 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 1,300 ft (396 m), by barometer. Prior to Oct. 6, 1965, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--19 years, 13.0 ft³/s (0.368 m³/s), 9,420 acre-ft/yr (11.6 hm³/yr); median of yearly mean discharges, 1.1 ft³/s (0.03 m³/s) 800 acre-ft/yr (0.99 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, about 6,000 ft³/s (170 m³/s) Apr. 5, 1969; maximum gage height, 18.51 ft (5.642 m) Apr. 5, 1969 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1980 TOTAL 38.82 MEAN .11 MAX .55 MIN .00 AC-FT 77
WTR YR 1981 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

06474300 MEDICINE CREEK NEAR ZELL, SD

LOCATION.--Lat 44°45'52", long 98°42'13", in NW¼NW¼ sec.19, T.115 N., R.65 W., Spink County, Hyrologic Unit 10160009, on downstream side at center of bridge on State Highway 26, 3.8 mi (6.1 km) upstream from Cottonwood Lake and 9.2 mi (14.8 km) south of Zell.

DRAINAGE AREA.--210 mi^2 (540 km^2), approximately.

PERIOD OF RECORD.--September 1959 to September 1981 (discontinued).

GAGE.--Water-stage recorder. Altitude of gage is 1,320 ft (402 m), from topographic map.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--22 years, 5.72 ft^3/s (0.162 m^3/s), 4,140 acre-ft/yr (5.10 hm^3/yr); median of yearly mean discharges, 1.7 ft^3/s (0.05 m^3/s), 1,200 acre-ft/yr (1.5 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,210 ft^3/s (62.6 m^3/s) Apr. 5, 1969, gage height, 12.41 ft (3.783 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2.3 ft^3/s (0.065 m^3/s) at 0500 hours, Aug. 1, gage height, 3.05 ft (0.930 m), no peak above base of 40 ft^3/s (1.13 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.16	.03	.01	.00	.25	.00
2	.00	.00	.00	.00	.00	.00	.09	.03	.02	.00	.02	.00
3	.00	.00	.00	.00	.00	.00	.08	.04	.02	.00	.07	.00
4	.00	.00	.00	.00	.00	.00	.07	.04	.02	.00	.05	.00
5	.00	.01	.00	.00	.00	.01	.06	.04	.01	.00	.05	.00
6	.00	.01	.00	.00	.00	.01	.06	.03	.00	.00	.02	.00
7	.00	.02	.00	.00	.00	.01	.06	.02	.00	.00	.01	.00
8	.00	.02	.00	.00	.00	.02	.06	.03	.00	.00	.00	.00
9	.00	.01	.00	.00	.00	.06	.06	.02	.01	.00	.00	.00
10	.00	.01	.00	.00	.00	.10	.06	.02	.00	.00	.00	.00
11	.00	.01	.00	.00	.00	.14	.06	.03	.01	.00	.00	.00
12	.00	.01	.00	.00	.00	.16	.05	.02	.02	.00	.00	.00
13	.00	.02	.00	.00	.00	.16	.05	.02	.02	.00	.00	.00
14	.00	.02	.00	.00	.01	.16	.05	.03	.02	.00	.00	.00
15	.00	.01	.00	.00	.02	.12	.05	.03	.02	.00	.00	.00
16	.02	.01	.00	.00	.05	.10	.06	.04	.00	.00	.00	.00
17	.00	.01	.00	.00	.09	.10	.06	.04	.00	.00	.00	.00
18	.00	.01	.00	.00	.11	.10	.05	.03	.00	.00	.00	.00
19	.00	.01	.00	.00	.12	.10	.06	.03	.00	.00	.00	.00
20	.00	.01	.00	.00	.13	.09	.04	.02	.00	.00	.00	.00
21	.00	.00	.00	.00	.12	.09	.05	.02	.00	.00	.00	.00
22	.00	.00	.00	.00	.11	.09	.05	.02	.00	.00	.00	.00
23	.00	.00	.00	.00	.09	.08	.05	.02	.00	.00	.00	.00
24	.00	.00	.00	.00	.07	.08	.04	.04	.00	.00	.00	.00
25	.00	.00	.00	.00	.05	.07	.04	.04	.00	.00	.00	.00
26	.00	.00	.00	.00	.03	.07	.04	.04	.00	.00	.00	.00
27	.01	.00	.00	.00	.02	.06	.04	.03	.00	.00	.00	.00
28	.00	.01	.00	.00	.01	.07	.02	.04	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.20	.03	.03	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.08	.02	.02	.00	.00	.00	.00
31	.00	---	.00	.00	---	.22	---	.02	---	.00	.00	---
TOTAL	.03	.21	.00	.00	1.03	2.55	1.67	.91	.18	.00	.47	.00
MEAN	.001	.007	.000	.000	.037	.082	.056	.029	.006	.000	.015	.000
MAX	.02	.02	.00	.00	.13	.22	.16	.04	.02	.00	.25	.00
MIN	.00	.00	.00	.00	.00	.00	.02	.02	.00	.00	.00	.00
AC-FT	.06	.4	.00	.00	2.0	5.1	3.3	1.8	.4	.00	.9	.00

CAL YR 1980 TOTAL 78.12 MEAN .21 MAX 3.7 MIN .00 AC-FT 155
WTR YR 1981 TOTAL 7.05 MEAN .019 MAX .25 MIN .00 AC-FT 14

06475000 JAMES RIVER NEAR REDFIELD, SD

LOCATION.--Lat 44°55'13", long 98°25'52", in SW¼NW¼ sec.28, T.117 N., R.63 W., Spink County, Hydrologic Unit 10160006, on right bank at downstream side of highway bridge, 5.2 mi (8.4 km) northeast of Redfield and 5.2 mi (8.4 km) downstream from Turtle Creek.

DRAINAGE AREA.--14,800 mi² (38,300 km²), approximately, of which about 4,600 mi² (11,900 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,236.3 ft (376.82 m) National Geodetic Vertical Datum of 1929. Prior to July 26, 1951, nonrecording gage at same site and datum.

REMARKS.--Records fair Oct. 1 to Nov. 22, Apr. 7 to May 4 and poor Nov. 23 to Apr. 6, May 5 to Sept. 30. Flow regulated by Arrowwood and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 303 mi (488 km) upstream since May 1953. Low flow affected by wind at times. Flow below 100 ft³/s (2.832 m) for water years 1964-79 may be unreliable because of wind effect. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--30 years, 191 ft³/s (5.409 m³/s), 138,400 acre-ft/yr (171 hm³/yr); median of yearly mean discharges, 116 ft³/s (3.29 m³/s), 84,000 acre-ft/yr (100 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,310 ft³/s (207 m³/s) Apr. 13, 1969, gage height, 24.93 ft (7.599 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 350 ft³/s (9.91 m³/s) at 1700 hours, Apr. 21, gage height, 7.15 ft (2.179 m); no flow Sept. 20-30.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1979 TO SEPTEMBER 1980
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	102	162	202	103	9.4	5.3	104	182	26	20	1.3	.70
2	102	179	242	90	8.8	5.1	120	149	22	16	1.0	.54
3	102	192	243	80	8.8	4.9	131	123	16	18	.64	.46
4	101	193	244	71	8.9	4.7	144	105	18	22	.45	.38
5	99	187	246	60	8.8	4.7	171	89	21	19	.33	.33
6	99	195	247	53	8.5	4.7	204	73	25	17	.25	.28
7	101	208	246	45	8.2	4.6	219	65	30	15	.17	.25
8	101	217	239	39	8.0	4.7	236	60	35	13	.15	.23
9	101	232	239	35	8.0	5.3	246	56	39	11	.14	.20
10	107	236	235	32	7.8	5.9	260	52	42	9.2	.13	.17
11	107	248	224	28	7.2	6.1	251	49	44	7.5	.13	.14
12	104	256	219	25	7.0	6.1	251	47	43	6.3	.14	.12
13	108	254	217	23	6.8	6.5	264	45	43	5.0	1.0	.10
14	116	257	212	23	6.3	8.8	272	43	44	4.1	3.0	.08
15	114	262	206	23	6.3	19	275	41	44	3.8	6.0	.07
16	110	264	196	22	6.5	24	283	39	40	5.8	10	.06
17	113	248	191	20	6.3	22	288	38	35	5.1	12	.04
18	117	275	186	19	6.1	28	307	36	31	4.6	11	.02
19	120	273	179	18	5.9	33	312	35	28	3.3	13	.01
20	118	273	177	17	5.9	35	321	33	25	2.8	16	.00
21	113	247	172	17	5.9	34	339	30	23	2.5	17	.00
22	112	263	168	16	5.7	34	332	29	21	2.0	13	.00
23	114	259	164	15	6.1	34	331	27	23	1.6	8.0	.00
24	122	255	163	15	6.1	36	339	25	26	1.3	6.2	.00
25	131	257	160	14	5.9	37	337	22	29	1.2	4.6	.00
26	134	252	158	13	5.9	39	334	20	28	1.2	3.2	.00
27	144	250	156	13	5.9	42	318	18	26	1.3	2.5	.00
28	142	248	150	12	5.3	46	292	16	24	1.6	1.8	.00
29	148	245	142	11	5.1	51	262	16	24	2.1	1.4	.00
30	148	242	130	11	---	62	224	17	22	2.7	1.1	.00
31	151	---	116	10	---	81	---	21	---	1.7	.88	---
TOTAL	3601	7129	6109	973	201.4	734.4	7767	1601	897	227.7	136.51	4.18
MEAN	116	238	197	31.4	6.94	23.7	259	51.6	29.9	7.35	4.40	.14
MAX	151	275	247	103	9.4	81	339	182	44	22	17	.70
MIN	99	162	116	10	5.1	4.6	104	16	16	1.2	.13	.00
AC-FT	7140	14140	12120	1930	399	1460	15410	3180	1780	452	271	8.3

WTR YR 1980 TOTAL 29381.19 MEAN 80.3 MAX 339 MIN .00 AC-FT 58280

06475000 JAMES RIVER NEAR REDFIELD, SD

LOCATION.--Lat 44°55'13", long 98°25'52", in SW¼NW¼ sec.28, T.117 N., R.63 W., Spink County, Hydrologic Unit 10160006, on right bank at downstream side of highway bridge, 5.2 mi (8.4 km) northeast of Redfield and 5.2 mi (8.4 km) downstream from Turtle Creek.

DRAINAGE AREA.--14,800 mi^2 (38,300 km^2), approximately, of which about 4,600 mi^2 (11,900 km^2) is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,236.3 ft (376.82 m) National Geodetic Vertical Datum of 1929. Prior to July 26, 1951, nonrecording gage at same site and datum.

REMARKS.--Records poor. Flow regulated by Arrowwood and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 303 mi (488 km) upstream since May 1953. Low flow affected by wind at times. Flow below 100 ft^3/s (2.832 m) for water years 1964-79 may be unreliable because of wind effect. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 years, 185 ft^3/s (5.239 m^3/s), 134,000 acre-ft/yr (165 hm^3/yr); median of yearly mean discharges, 120 ft^3/s (3.40 m^3/s), 86,900 acre-ft/yr (110 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 7,310 ft^3/s (207 m^3/s) Apr. 13, 1969, gage height, 24.93 ft (7.599 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 48 ft^3/s (1.359 m^3/s) Dec. 21, gage height, 4.81 ft (1.466 m), backwater from ice; no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	1.0	12	24	16	8.2	15	17	.06	.21	.00	.00
2	.00	.96	12	28	15	7.8	17	14	.04	.08	.00	.00
3	.00	.37	14	28	14	7.4	20	12	.04	.00	.00	.00
4	.08	.76	15	25	13	8.0	16	11	.03	.00	.00	.00
5	.12	.91	16	23	11	10	17	13	.03	.00	.00	.00
6	.00	.90	16	26	10	9.5	18	12	.02	.00	.00	.00
7	.00	.85	16	27	9.2	10	15	11	.02	.00	.00	.00
8	.08	.67	18	26	7.7	10	14	9.7	.02	.00	.00	.00
9	.00	.78	20	25	6.7	11	14	8.6	.02	.00	.00	.00
10	.00	1.1	24	24	5.7	12	15	7.8	.02	.00	.00	.00
11	.00	1.2	27	22	5.1	13	17	10	.03	.00	.00	.00
12	.16	.90	30	20	4.9	15	20	9.0	.03	.00	.00	.00
13	.30	.79	33	19	4.7	16	27	5.0	.04	.00	.00	.00
14	.00	1.1	36	20	4.4	18	40	2.3	.07	.00	.00	.00
15	.26	1.0	37	21	4.8	19	58	1.8	.10	.00	.00	.00
16	.77	1.1	39	20	5.3	20	66	1.6	.14	.00	.00	.00
17	.05	1.1	40	19	5.6	22	69	1.5	.22	.00	.00	.00
18	.21	1.1	43	16	5.8	22	72	2.3	.31	.00	.00	.00
19	.36	1.4	47	17	6.0	19	69	2.8	.43	.00	.00	.00
20	.37	3.4	48	18	6.3	18	65	3.0	.55	.00	.00	.00
21	.61	7.2	46	18	6.2	19	60	2.6	.65	.00	.00	.00
22	.88	9.0	39	18	5.8	21	57	1.5	.73	.00	.00	.00
23	.40	9.1	34	18	5.2	23	54	1.2	.79	.00	.00	.00
24	.57	10	28	18	4.8	21	50	.90	.83	.00	.00	.00
25	.47	11	24	18	4.3	20	45	.64	.84	.00	.00	.00
26	.76	11	22	19	4.8	20	41	.45	.86	.00	.00	.00
27	.65	11	20	19	5.4	18	35	.32	.82	.00	.00	.00
28	.63	12	18	19	6.4	16	29	.26	.77	.00	.00	.00
29	.80	12	18	18	---	11	24	.23	.60	.00	.00	.00
30	.64	13	19	18	---	12	21	.19	.37	.00	.00	.00
31	.79	---	20	17	---	13	---	.12	---	.00	.00	---
TOTAL	9.96	126.69	831	648	204.1	469.9	1080	163.81	9.48	.29	.00	.00
MEAN	.32	4.22	26.8	20.9	7.29	15.2	36.0	5.28	.32	.009	.000	.000
MAX	.88	13	48	28	16	23	72	17	.86	.21	.00	.00
MIN	.00	.37	12	16	4.3	7.4	14	.12	.02	.00	.00	.00
AC-FT	20	251	1650	1290	405	932	2140	325	19	.6	.00	.00

CAL YR 1980 TOTAL 13509.84 MEAN 36.9 MAX 339 MIN .00 AC-FT 26800
WTR YR 1981 TOTAL 3543.23 MEAN 9.71 MAX 72 MIN .00 AC-FT 7030

06476000 JAMES RIVER AT HURON, SD

LOCATION.--Lat 44°21'49", long 98°11'56", in SW¼SE¼NE¼ sec.6, T.110 N., R.61 W., Beadle County, Hydrologic Unit 10160006, on right bank 15 ft (5 m) upstream from city dam at Huron, 135 ft (41 m) downstream from Chicago and North Western Transportation Co. bridge and 165 ft (50 m) upstream from bridge on business loop U.S. Highway 14.

DRAINAGE AREA.--16,800 mi² (43,500 km), approximately, of which about 4,790 mi² (12,400 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--August 1928 to September 1932, August 1943 to current year. Monthly discharge only for some periods, published in WSP 1309. Gage-height records collected at site about 100 ft (30 m) downstream for period of open water each year July 1902 to June 1914 and for period March to June 1915-23 are in reports of U.S. Weather Bureau.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 1,223.44 ft (372.905 m) National Geodetic Vertical Datum of 1929. Aug. 29, 1928, to Mar. 15, 1929, nonrecording gage at site 100 ft (30 m) downstream at about same datum. Mar. 16, 1929, to June 30, 1932, nonrecording gage 165 ft (50 m) downstream at present datum. Aug. 3, 1943, to Oct. 17, 1951, nonrecording gage at site 15 ft (5 m) downstream at present datum.

REMARKS.--Records good above 100 ft³/s (2.832 m³/s) and fair below. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity 229,470 acre-ft (283 hm³), 365 mi (587 km) upstream since May 1953. Satellite telemeter at station.

AVERAGE DISCHARGE.--42 years, 230 ft³/s (6.514 m³/s), 166,600 acre-ft/yr (205 hm³/yr); median of yearly mean discharges, 130 ft³/s (3.68 m³/s), 94,200 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,000 ft³/s (255 m³/s) Apr. 13, 1969, gage height, 16.70 ft (5.090 m); no flow for long periods in most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood between Apr. 11 and 13, 1881, reached a stage of 19.8 ft (6.04 m), from U.S. Weather Bureau publication. Flood of Mar. 22, 1922, reached a stage of 16.5 ft (5.03 m).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 143 ft³/s (4.05 m³/s) at 0615 hours, Apr. 13, gage height, 8.99 ft (2.740 m); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	24	22	15	39	24	.00	.00	.00	.00
2	.00	.00	.00	24	21	13	33	1.5	.00	.00	14	.00
3	.00	.00	.00	24	19	12	62	19	.00	.00	77	.00
4	.00	.00	.00	24	18	13	38	32	.00	.00	66	.00
5	.00	.00	.00	24	16	13	29	15	.00	.00	55	.00
6	.00	.00	.00	25	16	12	7.5	5.7	.00	.00	45	.00
7	.00	.00	.00	24	16	12	29	.07	.00	.00	34	.00
8	.00	.00	.00	24	15	13	23	.00	.00	.00	24	.00
9	.00	.00	.00	24	15	14	7.4	19	.00	.00	16	.00
10	.00	.00	.00	24	14	14	12	.34	.00	.00	5.0	.00
11	.00	.00	.00	27	13	10	17	.00	.00	.00	1.9	.00
12	.00	.00	.00	27	12	13	3.5	.00	.00	.00	.65	.00
13	.00	.00	.00	25	11	12	21	.28	.00	.00	.00	.00
14	.00	.00	.00	22	10	2.7	2.1	.05	.00	.00	.83	.00
15	.00	.00	.00	24	11	16	.00	.00	.00	.00	5.5	.00
16	.00	.00	.00	24	12	4.0	.00	.00	.00	.00	3.2	.00
17	.00	.00	.00	24	12	19	2.8	.00	.00	.00	.41	.00
18	.00	.00	.00	24	13	15	2.3	.05	.00	.00	.00	.00
19	.00	.00	.00	27	13	13	21	.00	.00	.00	.00	.00
20	.00	.00	.00	27	13	2.0	7.6	.00	.00	.00	.00	.00
21	.00	.00	1.5	27	14	4.4	3.3	.00	.00	.00	.00	.00
22	.00	.00	14	24	15	7.9	39	.00	.00	.00	.00	.00
23	.00	.00	18	23	14	4.4	49	.00	.00	.00	.00	.00
24	.00	.00	21	25	14	8.0	37	.00	.00	.00	.00	.00
25	.00	.00	21	26	14	13	39	.00	.00	.00	.00	.00
26	.00	.00	24	27	13	14	45	.00	.00	.00	.24	.00
27	.00	.00	24	28	14	3.1	39	.00	.00	.00	.45	.00
28	.00	.00	24	27	15	3.7	39	.00	.00	.00	.00	.00
29	.00	.00	24	23	---	30	45	.03	.00	.00	.00	.00
30	.00	.00	23	24	---	27	39	.00	.00	.00	.00	.00
31	.00	---	23	23	---	36	---	.00	---	.00	.00	---
TOTAL	.00	.00	217.50	769	405	389.2	731.50	117.02	.00	.00	349.16	.00
MEAN	.000	.000	7.02	24.8	14.5	12.6	24.4	3.77	.000	.000	11.3	.000
MAX	.00	.00	24	28	22	36	62	32	.00	.00	77	.00
MIN	.00	.00	.00	22	10	2.0	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	431	1530	803	772	1450	232	.00	.00	693	.00

CAL YR 1980 TOTAL 16080.46 MEAN 43.9 MAX 339 MIN .00 AC-FT 31900
WTR YR 1981 TOTAL 2978.40 MEAN 8.16 MAX 77 MIN .00 AC-FT 5910

06476000 JAMES RIVER AT HURON, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1949-52, 1956 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: September 1956 to October 1970, September 1971 to current year.
WATER TEMPERATURES: September 1956 to October 1970, September 1971 to current year.

REMARKS.--No flow Oct. 1 to Dec. 20, Apr. 15-16, May 11-12, 15-17, 19-28, May 30 to Aug. 1, Aug. 18-25, Aug. 28 to Sept. 30.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 3,170 micromhos Mar. 14, 1965; minimum daily, 175 micromhos Mar. 30, Apr. 2, 1960.
WATER TEMPERATURES: Maximum daily, 31.0°C June 2, 1968; minimum daily, 0.0°C on many days during winter periods.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)
DEC									
29...	1015	24	1720	8.1	3.0	490	150	92	64
JAN									
23...	1420	21	1480	9.7	4.5	570	170	120	66
FEB									
24...	1300	14	1320	7.7	7.5	360	110	76	42
MAR									
23...	1430	.70	1540	8.1	9.0	440	140	92	51
MAY									
04...	1500	58	1560	7.6	15.0	470	140	95	57
AUG									
03...	1400	98	1320	8.9	26.5	430	110	79	56

DATE	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)
DEC									
29...	180	43	3.5	16	340	380	120	.3	15
JAN									
23...	180	40	3.3	19	400	390	110	.5	11
FEB									
24...	140	45	3.2	13	250	280	110	.3	9.3
MAR									
23...	150	42	3.1	15	300	320	110	.3	10
MAY									
04...	170	43	3.4	16	330	400	96	.3	8.4
AUG									
03...	180	46	4.3	21	320	350	110	.3	18

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P) (00671)	PHOS-PHATE, ORTHO, DIS-SOLVED (MG/L AS PO4) (00660)
DEC								
29...	1070	1.4	69.3	.06	.180	.130	.100	.31
JAN								
23...	1140	1.5	64.6	.00	.120	.070	.030	.09
FEB								
24...	821	1.1	31.0	.00	.110	.040	.030	.09
MAR								
23...	929	1.2	1.7	.00	.150	.050	.010	.03
MAY								
04...	1040	1.4	163	.00	.300	.100	.050	.15
AUG								
03...	1010	1.3	267	.23	.690	.480	.390	1.2

06476000 JAMES RIVER AT HURON, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				1800	1700	1950	1420	1330			---	
2				1830	1700	1950	1400	1350			---	
3				1830	1700	1890	1340	1350			1460	
4				1820	1700	1850	1370	1320			1540	
5				1800	1750	1870	1270	1350			1540	
6				1870	1770	1860	1260	1340			1560	
7				1900	1820	1820	1260	---			1560	
8				1940	1810	1860	1240	---			1410	
9				1930	1870	1770	1240	1350			1340	
10				1960	1890	1790	1240	1360			1350	
11				1960	1920	1560	1230	---			1290	
12				2000	1930	1600	1240	---			---	
13				1950	1950	1600	1240	---			---	
14				1950	1970	1550	1240	---			---	
15				1930	1980	1550	---	---			---	
16				1900	2000	1540	---	---			---	
17				1900	1990	1530	---	---			---	
18				1860	1990	1550	1270	---			---	
19				1870	2000	1540	1270	---			---	
20				1870	2010	1550	1290	---			---	
21				1820	2020	1550	1350	---			---	
22				1820	2000	1520	1300	---			---	
23				1820	2010	1520	1300	---			---	
24				1800	2030	1530	1370	---			---	
25				1780	2000	1530	1400	---			---	
26				1780	2000	1520	1440	---			---	
27				1780	1990	1530	1460	---			---	
28				1740	1950	1490	1480	---			---	
29				1740	---	1490	1500	---			---	
30				1710	---	1490	1550	---			---	
31				1680	---	1460	---	---			---	
MEAN				1850	1910	1640	1330	1340			1450	

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1						---	7.0	14.0			---	
2						---	8.0	14.0			---	
3						---	8.0	16.0			23.0	
4						---	6.0	14.0			24.0	
5						---	7.0	13.0			23.0	
6						---	7.0	14.0			23.0	
7						---	6.0	---			23.0	
8						---	8.0	---			23.0	
9						---	8.0	13.0			22.0	
10						---	9.0	12.0			22.0	
11						---	11.0	---			21.0	
12						---	10.0	---			20.0	
13						---	10.0	---			---	
14						---	9.0	---			21.0	
15						---	---	---			21.0	
16						---	---	---			21.0	
17						---	---	---			22.0	
18						6.0	10.0	---			---	
19						4.0	12.0	---			---	
20						4.0	11.0	---			---	
21						4.0	12.0	---			---	
22						3.0	12.0	---			---	
23						5.0	11.0	---			---	
24						4.0	11.0	---			---	
25						6.0	11.0	---			---	
26						6.0	14.0	---			---	
27						6.0	16.0	---			---	
28						10.0	15.0	---			---	
29						9.0	16.0	---			---	
30						8.0	15.0	---			---	
31						8.0	---	---			---	
MEAN						6.0	10.5	14.0			22.0	

06476500 SAND CREEK NEAR ALPENA, SD

LOCATION.--Lat 44°09'15", long 98°26'06", in NE¼NE¼ sec.19, T.108 N., R.63 W., Jerauld County, Hydrologic Unit 10160006, on left bank 5 ft (2 m) downstream from highway bridge, 4.0 mi (6.4 km) southwest of Alpena, 7.0 mi (11.3 km) upstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 10.5 mi (16.9 km) upstream from interlink with Cain Creek.

DRAINAGE AREA.--240 mi² (622 km²), approximately.

PERIOD OF RECORD.--March 1950 to current year.

REVISED RECORDS.--WSP 1309: 1950(M).

GAGE.--Water-stage recorder. Altitude of gage is 1,315 ft (401 m). Prior to Sept. 17, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good.

AVERAGE DISCHARGE.--31 years, 8.58 ft³/s (0.243 m³/s), 6,220 acre-ft/yr (7.67 hm³/yr); median of yearly mean discharges, 5.4 ft³/s (0.15 m³/s), 3,900 acre-ft/yr (4.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,240 ft³/s (63.4 m³/s) Mar. 28, 1960, gage height, 13.35 ft (4.069 m); maximum gage height, 14.1 ft (4.30 m) Mar. 28, 1950 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1980 TOTAL 5.50 MEAN .015 MAX .74 MIN .00 AC-FT 11
WTR YR 1981 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

06477000 JAMES RIVER NEAR FORESTBURG, SD

LOCATION.--Lat 43°58'26", long 98°04'14", in SW¼SW¼NW¼ sec.20, T.106 N., R.60 W., Sanborn County, Hydrologic Unit 10160011, on right bank 5.0 ft (2 m) downstream from highway bridge, 3.8 mi (6.1 km) southeast of Forestburg, 5.4 mi (8.7 km) downstream from Chicago, Milwaukee, St. Paul and Pacific Railroad bridge, and 6.1 mi (9.8 km) downstream from Sand Creek.

DRAINAGE AREA.--18,600 mi² (48,200 km²), approximately, of which about 4,790 mi² (12,400 km²) is probably noncontributing.

PERIOD OF RECORD.--March 1950 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,208.34 ft (368.302 m) National Geodetic Vertical Datum of 1929 (Bureau of Reclamation bench mark). Prior to Sept. 5, 1951, nonrecording gage at same site and datum.

REMARKS.--Records good. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm³), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm³), 408 mi (656 km) upstream since May 1953. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--31 years, 272 ft³/s (7.703 m³/s), 197,100 acre-ft/yr (243 hm³/yr); median of yearly mean discharges, 140 ft³/s (3.96 m³/s), 101,000 acre-ft/yr (120 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 12,500 ft³/s (354 m³/s) Apr. 9, 1969, gage height, 17.16 ft (5.230 m); no flow at times in 1950, 1955, 1959, 1961, 1970, 1976, 1977, 1981.

EXTREMES OUTSIDE PERIOD OF RECORD.--Floods in March 1920 and March 1922 reached a stage of about 18 ft (5.49 m), from information by local residents.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 63 ft³/s (1.78 m³/s) at 0015 hours, Apr. 6; maximum gage height, 3.20 ft (0.975 m) Apr. 3; no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 8, 9, Feb. 6 to Mar. 1, July 19 to Aug. 22)

2.1	0	2.6	8.8
2.2	.14	2.8	18
2.3	.90	3.0	36
2.4	2.6	3.3	72

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	17	1.8	14	23	17	28	35	1.0	.00	.00	.38
2	.00	17	1.8	32	22	16	46	30	.86	.00	.00	.30
3	.03	15	1.6	31	20	16	57	31	.70	.03	.08	.24
4	.02	14	1.6	28	18	15	57	26	.56	.02	.23	.02
5	.02	12	1.8	23	16	15	60	21	.47	.02	.43	.00
6	.01	12	1.8	23	16	14	55	18	.37	.00	.30	.00
7	.00	11	1.6	23	15	14	44	15	.34	.00	.18	.00
8	.01	9.5	1.6	23	14	14	34	14	.43	.00	20	.00
9	.00	7.7	1.4	22	14	12	29	13	.50	.00	55	.00
10	.00	7.0	1.4	21	14	12	33	12	.56	.00	53	.00
11	.00	6.1	1.2	19	14	11	41	12	.54	.00	58	.00
12	.00	5.6	1.2	18	14	10	40	11	.47	.00	59	.00
13	.00	5.3	1.4	18	14	10	36	9.1	.42	.00	50	.00
14	.00	5.3	1.4	20	13	10	32	7.8	.38	.00	46	.00
15	.00	4.8	1.4	21	13	9.2	31	6.8	.45	.00	38	.00
16	.04	4.1	1.6	21	13	9.6	30	6.8	.60	.00	28	.00
17	.00	3.9	1.6	20	14	10	25	7.0	.62	.00	19	.00
18	.00	3.4	1.8	18	14	9.6	24	6.6	.53	.00	13	.00
19	.02	3.2	1.4	17	16	9.2	24	5.7	.37	.00	9.0	.00
20	.02	3.0	1.4	17	17	9.6	20	4.8	.36	.00	6.6	.00
21	.04	2.4	1.4	18	18	11	16	3.3	.31	.00	4.9	.00
22	.04	2.2	1.4	18	18	10	14	2.6	.28	.00	3.8	.00
23	.00	2.1	1.4	20	18	11	12	2.8	.20	.00	3.1	.00
24	.02	2.1	1.2	21	19	12	12	2.6	.16	.00	2.6	.00
25	.02	1.4	1.4	22	18	12	13	2.6	.11	.00	2.0	.00
26	.06	1.4	1.4	23	17	11	18	2.6	.10	.00	1.7	.00
27	2.2	1.4	1.4	23	18	11	26	2.6	.05	.00	1.3	.00
28	14	1.6	1.5	21	18	11	31	2.4	.04	.00	.98	.00
29	18	1.2	1.8	21	---	13	33	2.0	.04	.00	.71	.00
30	18	1.4	2.0	20	---	14	35	1.8	.02	.00	.56	.00
31	18	---	2.8	20	---	18	---	1.2	---	.00	.46	---
TOTAL	70.55	184.1	48.5	656	458	377.2	956	319.1	11.84	.07	477.93	.94
MEAN	2.28	6.14	1.56	21.2	16.4	12.2	31.9	10.3	.39	.002	15.4	.031
MAX	18	17	2.8	32	23	18	60	35	1.0	.03	59	.38
MIN	.00	1.2	1.2	14	13	9.2	12	1.2	.02	.00	.00	.00
AC-FT	140	365	96	1300	908	748	1900	633	23	.1	948	1.9

CAL YR 1980 TOTAL 15928.03 MEAN 43.5 MAX 334 MIN .00 AC-FT 31590
WTR YR 1981 TOTAL 3560.23 MEAN 9.75 MAX 60 MIN .00 AC-FT 7060

06477500 FIRESTEEL CREEK NEAR MOUNT VERNON, SD

LOCATION.--Lat 43°46'30", long 98°14'33", in SW¼SW¼ sec.26, T.104 N., R.62 W., Davison County, Hydrologic Unit 10160011, near center of span on downstream side of highway bridge, 4.5 mi (7.2 km) north of Mount Vernon, 5.2 mi (8.4 km) downstream from West Firesteel Creek, and 12 mi (19 km) northwest of Mitchell.

DRAINAGE AREA.--540 mi² (1,400 km²), approximately.

PERIOD OF RECORD.--September 1955 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,297.22 ft (395.393 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1972, nonrecording gage and crest-stage gage.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--26 years, 20.1 ft³/s (0.569 m³/s), 14,560 acre-ft/yr (18.0 hm³/yr); median of yearly mean discharges, 7.0 ft³/s (0.20 m³/s), 5,100 acre-ft/yr (6.3 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,610 ft³/s (187 m³/s) Apr. 4, 1969, gage height, 15.34 ft (4.676 m); maximum gage height, 17.12 ft (5.218 m) Apr. 3, 1969 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 16 ft³/s (0.45 m³/s) at 2100 hours, Aug. 4, gage height, 3.46 ft (1.055 m), nc peak above base of 100 ft³/s (2.83 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.02	.04	.06	.02	.20	.60	.00	.04	.00	.00	.03
2	.00	.00	.03	.05	.02	.20	.55	.00	.06	.00	.16	.02
3	.00	.02	.03	.03	.02	.25	.71	.00	.13	.00	.95	.00
4	.00	.01	.03	.01	.02	.25	.83	.02	.20	.00	2.5	.00
5	.00	.02	.05	.01	.02	.20	.71	.02	.00	.00	2.2	.00
6	.00	.01	.05	.01	.02	.16	.60	.04	.00	.00	.16	.30
7	.00	.02	.04	.01	.02	.20	.20	.03	.00	.00	.25	.25
8	.00	.02	.03	.01	.01	.20	.05	.01	.00	.00	.30	.25
9	.00	.01	.02	.01	.01	.16	.08	.03	.00	.00	.16	.02
10	.00	.02	.01	.01	.01	.10	.10	.02	.00	.00	.10	.02
11	.00	.01	.02	.01	.01	.13	.55	.00	.00	.00	.02	.00
12	.00	.03	.03	.02	.01	.20	.60	.00	.00	.00	.00	.01
13	.00	.02	.03	.03	.03	.16	.65	.03	.01	.00	.00	.01
14	.00	.02	.03	.02	.07	.20	.13	.05	.01	.00	.00	.02
15	.00	.01	.04	.02	.22	.08	.10	.10	.16	.00	.00	.00
16	.00	.02	.04	.01	.33	.13	.03	.13	.05	.00	.00	.00
17	.00	.03	.06	.02	.40	.08	.13	.13	.02	.00	.00	.00
18	.00	.03	.05	.03	.42	.10	.16	.16	.00	.00	.00	.00
19	.00	.03	.04	.04	.38	.08	.55	.10	.00	.00	.00	.00
20	.00	.03	.04	.05	.34	.13	.25	.08	.00	.00	.00	.00
21	.00	.04	.03	.07	.30	.16	.08	.10	.00	.00	.00	.00
22	.00	.05	.02	.09	.27	.20	.10	.08	.00	.00	.00	.00
23	.00	.06	.02	.11	.24	.55	.08	.06	.00	.00	.00	.00
24	.00	.06	.02	.13	.22	.45	.06	.06	.00	.00	.00	.00
25	.00	.06	.02	.10	.21	.16	.04	.10	.00	.00	.20	.00
26	.02	.06	.03	.08	.20	.13	.05	.20	.00	.00	.13	.00
27	.03	.06	.04	.06	.20	.08	.02	.16	.00	.00	.35	.00
28	.02	.06	.05	.03	.20	.55	.03	.20	.00	.00	.35	.00
29	.03	.05	.06	.02	---	.71	.00	.03	.00	.00	.20	.00
30	.04	.05	.06	.02	---	.83	.00	.02	.00	.00	.25	.00
31	.03	---	.06	.02	---	.55	---	.02	---	.00	.08	---
TOTAL	.17	.93	1.12	1.19	4.22	7.58	8.04	1.98	.68	.00	8.36	.93
MEAN	.005	.031	.036	.038	.15	.24	.27	.064	.023	.000	.27	.031
MAX	.04	.06	.06	.13	.42	.83	.83	.20	.20	.00	2.5	.30
MIN	.00	.00	.01	.01	.01	.08	.00	.00	.00	.00	.00	.00
AC-FT	.3	1.8	2.2	2.4	8.4	15	16	3.9	1.3	.00	17	1.8

CAL YR 1980 TOTAL 10.36 MEAN .028 MAX .95 MIN .00 AC-FT 21
WTR YR 1981 TOTAL 35.20 MEAN .096 MAX 2.5 MIN .00 AC-FT 70

06478052 ENEMY CREEK NEAR MITCHELL, SD

LOCATION.--Lat 43°38'33", long 97°59'09", in NW¼NW¼ sec.13, T.102 N., R.60 W., Davison County, Hydrologic Unit 10160011, on left bank 3 ft (0.9 m) downstream from highway bridge, 4.5 mi (7.2 km) southeast of Mitchell, and 7.3 mi (11.7 km) above mouth.

DRAINAGE AREA.--181 mi^2 (469 km^2), approximately.

PERIOD OF RECORD.--October 1975 to current year.

REVISED RECORDS.--WDR SD-78-1: 1977.

GAGE.--Water-stage recorder. Altitude of gage is 1,280 ft (390 m), from topographic map.

REMARKS.--Records good. One observation of water temperature and specific conductance was made during the year.

AVERAGE DISCHARGE.--6 years, 2.91 ft^3/s (0.082 m^3/s), 2,110 acre-ft/yr (2.60 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,390 ft^3/s (39.4 m^3/s) Mar. 19, 1978, gage height, 11.27 ft (3.435 m); maximum gage height, 12.54 ft (3.822 m) Mar. 19, 1978 (backwater from ice); no flow for many days in each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 0.02 ft^3/s (0.001 m^3/s) at 1605 hours, Apr. 9, gage height, 5.13 ft (1.564 m), no peak above base of 20 ft^3/s (0.57 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.002	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.1	.00	.00	.00	.00	.00

CAL YR 1980 TOTAL 24.66 MEAN .067 MAX .73 MIN .00 AC-FT 49
WTR YR 1981 TOTAL 0.07 MEAN .000 MAX .01 MIN .00 AC-FT .1

06478500 JAMES RIVER NEAR SCOTLAND, SD

LOCATION.--Lat 43°11'09", long 97°38'07", in SW¼SW¼ sec.30, T.97 N., R.57 W., Hutchinson County, Hydrologic Unit 10160011, on right bank 5.0 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) upstream from Dawson Creek and 5.2 mi (8.4 km) northeast of Scotland.

DRAINAGE AREA.--21,550 mi^2 (55,810 km^2), approximately, of which about 4,790 mi^2 (12,400 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--September 1928 to current year. Monthly discharge only for some periods, published in WSP 1309.

REVISED RECORDS.--WSP 786: Drainage area. WSP 956: 1937-38. WSP 1279: 1932, 1948.

GAGE.--Water-stage recorder and rock and earth control. Datum of gage is 1,168.51 ft (356.162 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 28, 1972, at site 0.25 mi (0.4 km) downstream at present datum.

REMARKS.--Records good. Flow regulated by Arrowwood and Jim Lakes, and Jamestown Reservoir, combined capacity, 246,000 acre-ft (303 hm^3), the largest of which is Jamestown Reservoir, capacity, 229,470 acre-ft (283 hm^3), 527 mi (848 km) upstream since May 1953. Occasional backwater caused by Dawson Creek; reverse flow occurred for part of May 15, 1961, from information by local residents.

AVERAGE DISCHARGE.--53 years, 368 ft^3/s (10.42 m^3/s), 266,600 acre-ft/yr (329 hm^3/yr); median of yearly mean discharges, 180 ft^3/s (5.10 m^3/s), 130,000 acre-ft/yr (160 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 15,200 ft^3/s (430 m^3/s) Apr. 3, 1962, gage height, 18.74 ft (5.712 m); no flow for many days in some years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 41 ft^3/s (1.16 m^3/s) Feb. 19 and 22; maximum gage height, 5.49 ft (1.673 m) Mar. 31; minimum daily discharge, 0.47 ft^3/s (0.013 m^3/s) Sept. 24.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.6	6.8	9.6	14	21	33	31	18	8.3	2.4	12	23
2	2.3	6.7	9.2	14	20	30	28	14	9.0	2.1	13	20
3	2.3	7.7	8.9	14	21	29	27	14	5.9	12	16	20
4	2.3	5.8	11	13	21	29	26	14	3.5	18	25	17
5	2.3	6.4	12	13	22	30	30	13	2.9	21	35	15
6	2.6	7.0	12	13	22	30	25	16	1.5	22	36	16
7	2.6	7.2	11	13	23	32	21	17	1.3	18	32	20
8	2.1	8.1	11	12	23	31	18	17	.52	18	27	18
9	2.1	6.8	11	12	22	30	15	20	1.1	14	21	16
10	2.6	6.3	11	12	22	30	18	21	1.5	11	18	16
11	3.1	6.0	11	12	22	29	18	28	.92	9.2	15	16
12	3.6	6.5	11	12	22	28	19	30	.63	7.8	13	12
13	3.6	6.8	11	12	22	25	21	29	1.0	5.8	12	12
14	3.6	5.6	12	14	23	22	21	28	5.5	5.5	12	10
15	3.1	6.3	12	15	26	24	17	27	8.6	4.7	10	9.5
16	3.6	6.6	13	15	29	22	17	25	11	3.4	8.1	7.9
17	3.1	6.7	14	15	34	22	16	21	10	3.4	6.6	6.8
18	7.0	6.5	14	15	38	23	12	22	9.7	3.6	5.0	5.9
19	8.2	6.1	13	17	40	22	13	21	6.8	4.8	3.8	4.9
20	9.4	6.1	12	19	39	20	13	20	5.9	4.6	2.7	3.8
21	8.8	4.7	13	19	39	20	13	17	6.2	3.1	2.0	2.9
22	8.8	5.7	12	19	38	18	17	15	5.5	2.1	1.7	1.5
23	8.8	6.8	13	22	35	16	18	14	4.2	2.6	1.5	.93
24	8.8	6.8	13	27	33	16	21	13	8.3	2.5	2.3	.47
25	8.2	7.3	12	28	31	15	22	14	8.9	3.2	5.0	.62
26	8.8	7.5	13	28	30	14	20	16	6.6	2.6	8.2	2.5
27	8.2	7.7	13	24	31	12	21	17	5.4	3.1	10	3.0
28	8.2	9.0	13	23	34	18	20	17	5.5	3.4	13	3.3
29	7.0	7.9	14	22	---	28	20	17	4.9	3.3	17	6.8
30	7.6	8.9	14	21	---	30	19	14	3.0	3.0	24	8.3
31	7.2	---	14	21	---	31	---	9.9	---	4.1	29	---
TOTAL	162.5	204.3	373.7	530	783	759	597	578.9	154.07	224.3	436.9	300.12
MEAN	5.24	6.81	12.1	17.1	28.0	24.5	19.9	18.7	5.14	7.24	14.1	10.0
MAX	9.4	9.0	14	28	40	33	31	30	11	22	36	23
MIN	2.1	4.7	8.9	12	20	12	12	9.9	.52	2.1	1.5	.47
AC-FT	322	405	741	1050	1550	1510	1180	1150	306	445	867	595

CAL YR 1980 TOTAL 21686.20 MEAN 59.3 MAX 315 MIN 2.1 AC-FT 43010
WTR YR 1981 TOTAL 5103.79 MEAN 14.0 MAX 40 MIN .47 AC-FT 10120

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1956-64, 1967-73, 1975 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: January 1953 to September 1969, October 1974 to current year.

REMARKS.--Prior to October 1969, continuous temperature thermograph at station.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,660 micromhos Jan. 9, 1977; minimum daily, 300 micromhos Mar. 19, 1977.
WATER TEMPERATURES: Maximum, 32.0°C Aug. 1, 2, 1957; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,400 micromhos on many days during May; minimum daily, 1,320 micromhos Jan. 17, 20, 23.
WATER TEMPERATURES: Maximum daily, 31.0°C July 13-15; minimum daily, 1.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
OCT										
22...	1130	7.3	1880	--	9.5	2.7	10.1	K29	58	810
NOV										
19...	1100	6.5	1860	7.3	3.9	3.6	11.1	K7	K6	790
DEC										
18...	1000	14	2160	7.4	3.0	6.6	13.5	K113	500	1000
JAN										
27...	1330	25	2600	--	1.0	2.6	8.6	--	--	1200
FEB										
27...	1200	31	1700	8.0	3.5	3.4	15.2	ND	ND	820
MAR										
26...	1130	15	2200	8.2	11.5	18	11.7	<1	K12	840
APR										
28...	1230	21	2150	8.2	17.5	16	8.8	250	800	930
MAY										
22...	1200	15	2500	--	17.0	11	11.1	K110	630	980
JUN										
16...	1300	13	1830	8.6	20.5	8.4	10.5	2200	5000	890
JUL										
28...	1200	3.7	1650	8.5	21.0	21	5.1	K70	K200	800
AUG										
25...	1100	4.6	1500	7.9	22.5	19	4.2	K70	230	780
SEP										
30...	0900	7.7	1850	8.3	18.5	10	7.2	K200	200	770

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT										
22...	570	190	81	120	24	1.8	21	690	240	59
NOV										
19...	530	180	63	120	24	1.9	21	770	260	53
DEC										
18...	730	260	93	130	21	1.8	19	890	300	51
JAN										
27...	880	290	110	140	20	1.8	21	1100	300	54
FEB										
27...	600	200	79	100	21	1.5	13	770	220	46
MAR										
26...	620	200	83	130	25	2.0	17	860	220	55
APR										
28...	710	210	98	170	28	2.4	18	930	220	110
MAY										
22...	790	210	110	140	23	1.9	18	990	190	110
JUN										
16...	760	190	100	170	29	2.5	20	980	130	98
JUL										
28...	610	170	91	170	31	2.6	21	770	190	87
AUG										
25...	590	171	86	140	27	2.4	23	770	190	66
SEP										
30...	560	178	80	130	26	2.2	22	780	210	51

< Less than.
K Non-ideal colony count.
ND Not detected.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	FLUORIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
OCT										
22...	.5	17	1440	1320	1.9	28.4	--	.00	.00	.000
NOV										
19...	.5	17	1540	1400	2.0	27.1	--	.00	.23	.080
DEC										
18...	.6	18	1730	1640	2.3	65.9	--	.09	.04	.260
JAN										
27...	.5	2.5	1870	1900	2.5	126	--	.00	2.8	.080
FEB										
27...	.4	8.6	1420	1350	1.9	120	--	.41	.50	.070
MAR										
26...	.5	10	1620	1490	2.2	65.6	--	.01	.01	.040
APR										
28...	.5	7.8	1780	1680	2.4	101	--	.14	.15	.110
MAY										
22...	.2	9.5	1880	1700	2.5	76.1	--	.09	.02	.130
JUN										
16...	.4	17	1720	1610	2.3	60.4	--	.07	.05	.020
JUL										
28...	.4	26	1650	1450	2.2	16.5	--	.09	.09	.190
AUG										
25...	.5	30	1550	1400	2.1	19.3	--	.10	<.09	.100
SEP										
30...	.6	24	1440	1390	1.9	30.0	--	.12	.12	.100

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS NH4) (71846)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N) (00607)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AM-MONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITRO-GEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN DIS-SOLVED (MG/L AS N) (00602)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)
OCT										
22...	.00	.040	1.0	15	1.0	14	15.0	1.0	15	66
NOV										
19...	.10	.080	.88	--	.96	--	--	.96	--	--
DEC										
18...	.33	.230	1.3	1.2	1.6	.00	1.40	1.7	1.4	6.4
JAN										
27...	.10	.030	.74	1.5	.82	.68	1.50	.82	4.3	19
FEB										
27...	.09	.070	1.1	1.2	1.2	.10	1.30	1.6	1.8	8.0
MAR										
26...	.05	.020	1.1	1.2	1.1	.10	1.20	1.1	1.2	5.4
APR										
28...	.14	.150	.89	1.7	1.0	.80	1.80	1.1	2.0	8.6
MAY										
22...	.17	.100	1.6	2.4	1.7	.80	2.50	1.8	2.5	11
JUN										
16...	.03	.130	1.2	2.5	1.2	1.4	2.60	1.3	2.7	12
JUL										
28...	.24	.280	1.1	1.8	1.3	.80	2.10	1.4	2.2	9.7
AUG										
25...	.13	.070	1.0	2.1	1.1	1.1	2.20	1.2	--	--
SEP										
30...	.13	.120	1.0	1.2	1.1	.20	1.30	1.2	1.4	6.3

< Less than.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOSPHORUS, DISSOLVED (MG/L AS P) (00666)	PHOSPHORUS, TOTAL (MG/L AS P) (00665)	PHOSPHORUS TOTAL (MG/L AS PO4) (71886)	PHOSPHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DISSOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUSPENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTOPLANKTON, TOTAL (CELLS PER ML) (60050)
OCT									
22...	--	.120	.300	.92	--	14	2.1	--	--
NOV									
19...	--	.060	.110	.34	--	--	--	28	--
DEC									
18...	--	.160	.150	.46	--	--	--	19	--
JAN									
27...	--	.040	.060	.18	--	11	1.2	--	--
FEB									
27...	--	.050	.120	.37	--	--	--	6.8	--
MAR									
26...	--	.050	.140	.43	--	--	--	13	3700
APR									
28...	--	.060	.160	.49	--	13	.2	--	--
MAY									
22...	--	.020	.310	.95	--	--	--	18	160000
JUN									
16...	--	.100	.430	1.3	--	--	--	16	25000
JUL									
28...	--	.420	.680	2.1	--	11	.5	--	41000
AUG									
25...	--	.320	.510	1.6	--	--	--	13	--
SEP									
30...	--	.030	.120	.37	--	--	--	10	--

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUSPENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DISSOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOVERABLE (UG/L AS CD) (01027)	CADMIUM SUSPENDED RECOVERABLE (UG/L AS CD) (01026)	CADMIUM DISSOLVED (UG/L AS CD) (01025)	CHROMIUM, TOTAL RECOVERABLE (UG/L AS CR) (01034)	CHROMIUM, SUSPENDED RECOV. (UG/L AS CR) (01031)	CHROMIUM, DISSOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOVERABLE (UG/L AS CO) (01037)
OCT											
22...	1130	4	0	4	0	--	<1	0	0	10	0
JAN											
27...	1330	2	1	1	0	0	0	0	0	0	1
APR											
28...	1230	4	1	3	0	0	0	10	10	0	1
JUL											
28...	1200	25	0	30	0	0	1	20	10	10	0

DATE	COBALT, SUSPENDED RECOVERABLE (UG/L AS CO) (01036)	COBALT, DISSOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOVERABLE (UG/L AS CU) (01042)	COPPER, SUSPENDED RECOVERABLE (UG/L AS CU) (01041)	COPPER, DISSOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOVERABLE (UG/L AS FE) (01045)	IRON, DISSOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOVERABLE (UG/L AS PB) (01051)	LEAD, SUSPENDED RECOVERABLE (UG/L AS PB) (01050)	LEAD, DISSOLVED (UG/L AS PB) (01049)	MANGANESE, TOTAL RECOVERABLE (UG/L AS MN) (01055)
OCT											
22...	--	<3	4	0	5	690	10	1	1	0	660
JAN											
27...	0	1	4	3	1	210	40	1	0	2	680
APR											
28...	1	0	5	4	1	710	30	1	0	2	3400
JUL											
28...	0	0	5	1	4	1000	40	4	0	7	3000

< Less than.

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	MANGANESE, SUSPENDED RECOV. (UG/L AS MN) (01054)	MANGANESE, DISSOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOVERABLE (UG/L AS HG) (71900)	MERCURY SUSPENDED RECOVERABLE (UG/L AS HG) (71895)	MERCURY DISSOLVED (UG/L AS HG) (71890)	SELENIUM, TOTAL (UG/L AS SE) (01147)	SELENIUM, SUSPENDED TOTAL (UG/L AS SE) (01146)	SELENIUM, DISSOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOVERABLE (UG/L AS ZN) (01092)	ZINC, SUSPENDED RECOVERABLE (UG/L AS ZN) (01091)	ZINC, DISSOLVED (UG/L AS ZN) (01090)
OCT 22...	270	390	.1	.1	.0	0	0	0	20	20	4
JAN 27...	200	480	6.2	6.2	.0	1	0	1	10	0	20
APR 28...	600	2800	.2	.1	.1	0	0	0	20	10	10
JUL 28...	400	2600	.3	.2	.1	0	0	0	20	0	70

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	SEDIMENT, SUSPENDED (MG/L) (80154)	SEDIMENT, DISCHARGE, SUSPENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT 22...	1130	7.3	86	1.7	--	--	--	--	74	99	100	--
NOV 19...	1100	6.5	26	.46	--	--	--	--	82	100	--	--
DEC 18...	1000	14	111	4.2	--	--	--	--	75	97	100	--
JAN 27...	1330	25	101	6.8	--	--	--	--	95	96	100	--
FEB 27...	1200	31	53	4.5	--	--	--	--	80	100	--	--
MAR 26...	1130	15	104	4.2	--	--	--	--	97	100	--	--
APR 28...	1230	21	178	10	78	--	--	--	97	100	--	--
MAY 22...	1200	15	170	6.9	96	--	--	--	99	100	--	--
JUN 16...	1300	13	880	31	14	--	--	--	30	43	81	100
JUL 28...	1200	3.7	186	1.9	93	--	--	--	99	100	--	--
AUG 25...	1100	4.6	88	1.1	96	--	--	--	100	--	--	--
SEP 23...	1050	--	248	--	99	--	--	--	--	--	--	--
30...	0900	7.7	98	2.0	93	--	--	--	--	--	--	--

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 19,80	MAR 26,81	MAY 22,81	JUN 16,81
TIME	1100	1130	1200	1300
TOTAL CELLS/ML	58000	3700	160000	25000
DIVERSITY: DIVISION	1.6	1.7	1.2	1.5
.CLASS	1.6	1.7	1.2	1.5
..ORDER	1.8	1.8	1.2	1.9
...FAMILY	2.1	2.0	2.0	2.0
....GENUS	2.7	2.2	2.0	2.2

ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....MICRACTINIUM	--	-	--	-	--	-	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	2700	5	440	12	*	0	320	1
....DICTYOSPHAERIUM	--	-	--	-	2800	2	130	1
....GLOEOACTINIUM	--	-	--	-	--	-	1600	6
....KIRCHNERIELLA	--	-	--	-	1700	1	260	1
....OOCYSTIS	1900	3	120	3	1400	1	--	-
....SELENASTRUM	5300	9	65	2	--	-	--	-
....TETRAEDRON	--	-	*	0	--	-	--	-
....TREUBARIA	480	1	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	--	-	--	-	--	-	*	0
....CRUCIGENIA	5800	10	--	-	--	-	260	1
....SCENEDESMUS	2400	4	100	3	2800	2	890	4
....TETRASTRUM	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CARTERIA	--	-	--	-	--	-	1300	5
....CHLAMYDOMONAS	--	-	*	0	*	0	380	2
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...CHAETOCERACEAE								
....CHAETOCEROS	--	-	--	-	*	0	--	-
...COSCINODISCACEAE								
....CYCLOTELLA	7500	13	--	-	1000	1	1200	5
....MELOSIRA	480	1	--	-	--	-	--	-
....STEPHANODISCUS	--	-	39	1	--	-	--	-
..PENNALES								
...CYMBELLACEAE								
....AMPHORA	--	-	*	0	*	0	--	-
...NAVICULACEAE								
....ENTOMONEIS	--	-	*	0	--	-	--	-
....NAVICULA	--	-	26	1	--	-	--	-
...NITZSCHIACEAE								
....NITZSCHIA	3400	6	26	1	38000#	23	4400#	18
.CHRYSOPHYCEAE								
..CHRYSOMONADALES								
...OCHROMONADACEAE								
....OCHROMONAS	--	-	--	-	--	-	--	-
CRYPTOPHYTA (CRYPTOMONADS)								
.CRYPTOPHYCEAE								
..CRYPTOMONADALES								
...CRYPTOCHRYSIDACEAE								
....CHROOMONAS	--	-	90	2	--	-	--	-
...CRYPTOMONADACEAE								
....CRYPTOMONAS	--	-	26	1	*	0	*	0
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....ANACYSTIS	26000#	45	2000#	55	--	-	--	-
....GOMPHOSPHAERIA	970	2	--	-	--	-	--	-
..HORMOGONALES								
...NOSTOCACEAE								
....ANABAENA	--	-	--	-	73000#	45	--	-
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	39000#	24	14000#	56

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 19,80		MAR 26,81		MAY 22,81		JUN 16,81	
TIME	1100		1130		1200		1300	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	--	-	*	0	--	-
....PHACUS	--	-	--	-	--	-	--	-
....TRACHELOMONAS	970	2	6800#	19	*	0	190	1
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	*	0	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

DATE	JUL 28,81		AUG 25,81		SEP 30,81	
TIME	1200		1100		0900	
TOTAL CELLS/ML	41000		47000		47000	
DIVERSITY: DIVISION	1.9		1.7		1.4	
.CLASS	1.9		1.7		1.4	
..ORDER	2.3		2.1		1.6	
...FAMILY	2.8		2.3		1.7	
....GENUS	3.2		2.9		1.9	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	270	1	*	0	360	1
...MICRACTINIACEAE						
....MICRACTINIUM	540	1	--	-	--	-
...OOCYSTACEAE						
....ANKISTRODESMUS	3500	8	1600	3	4500	10
....DICTYOSPHAERIUM	--	-	1400	3	--	-
....GLOEOACTINIUM	--	-	1400	3	--	-
....KIRCHNERIELLA	810	2	--	-	360	1
....OOCYSTIS	540	1	1600	3	--	-
....SELENASTRUM	--	-	--	-	--	-
....TETRAEDRON	270	1	360	1	--	-
....TREUBARIA	--	-	--	-	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	--	-	--	-	--	-
....CRUCIGENIA	--	-	--	-	720	2
....SCENEDESMUS	10000#	25	4300	9	1100	2
....TETRASTRUM	--	-	710	2	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CARTERIA	810	2	4600	10	3800	8
....CHLAMYDOMONAS	2400	6	--	-	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...CHAETOCERACEAE						
....CHAETOCEROS	--	-	--	-	--	-
...COSCINODISCACEAE						
....CYCLOTELLA	4100	10	1200	3	--	-
....MELOSIRA	1100	3	*	0	--	-
....STEPHANODISCUS	--	-	--	-	--	-
..PENNALES						
...CYMBELLACEAE						
....AMPHORA	--	-	--	-	--	-
...NAVICULACEAE						
....ENTOMONEIS	--	-	--	-	--	-
....NAVICULA	540	1	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	270	1	530	1	--	-

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

PHYTOPLANKTON ANALYSES

DATE	JUL 28,81		AUG 25,81		SEP 30,81	
TIME	1200		1100		0900	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
.CHRYSOPHYCEAE						
..CHRYSOMONADALES						
...OCHROMONADACEAE						
....OCHROMONAS	--	-	*	0	--	-
CRYPTOPHYTA (CRYPTOMONADS)						
.CRYPTOPHYCEAE						
..CRYPTOMONADALES						
...CRYPTOCHRYSIDACEAE						
....CHROOMONAS	--	-	*	0	--	-
...CRYPTOMONADACEAE						
....CRYPTOMONAS	810	2	3900	8	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....ANACYSTIS	--	-	--	-	--	-
....GOMPHOSPHAERIA	--	-	--	-	--	-
..HORMOGONALES						
...NOSTOCACEAE						
....ANABAENA	--	-	--	-	--	-
...OSCILLATORIACEAE						
....OSCILLATORIA	6500#	16	23000#	49	28000#	60
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	8400#	20	710	2	900	2
....PHACUS	--	-	360	1	--	-
....TRACHELOMONAS	270	1	*	0	7000#	15
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06478500 JAMES RIVER NEAR SCOTLAND, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1960	1800	2060	1460	2600	1760	1670	2350	2260	2120	1950	2020
2	1900	1850	2100	1460	2800	1800	1700	2370	2250	2120	1960	2040
3	1900	1850	2060	1450	2800	1770	1700	2400	2250	2120	1960	2040
4	1920	1880	2090	1460	2800	1770	1700	2400	2250	2120	1950	2030
5	1930	1860	2100	1550	2600	1800	1700	2400	2250	2120	1960	2030
6	1930	1860	2100	1550	2800	1740	1700	2400	2250	2100	1960	2030
7	1930	1860	2120	1520	2780	1740	1740	2390	2250	2100	1920	2030
8	1930	1860	2110	1500	2700	1750	1740	2370	2250	2100	1920	2030
9	1920	1860	2130	2260	2640	1750	1750	2360	2250	2100	1920	1870
10	1920	1870	2100	2260	2140	1750	1750	2360	2250	2100	1920	1890
11	1930	1860	2100	2300	2140	1750	1750	2400	2250	2100	1930	1880
12	1900	1870	2100	2190	2150	1750	1750	2400	2140	2100	1920	1880
13	1900	1920	2140	2200	2150	1750	1750	2400	2140	2100	1920	1860
14	1890	1930	2100	2210	2150	2020	1750	2400	2150	2060	1920	1880
15	1890	1940	2110	2260	660	2030	1800	2400	2150	2060	2000	1880
16	1900	1910	2150	2250	660	2050	1800	2400	2140	2060	2000	1880
17	1900	1930	2100	1320	640	2020	1800	2360	2140	2060	2000	1820
18	1900	1940	2100	1490	2050	2030	1800	2350	2140	2060	2000	1820
19	1900	1940	2140	1500	2050	2050	1780	2350	2140	2060	2000	1850
20	1870	1940	2150	1320	2050	2040	1800	2350	2170	2050	2000	1850
21	1870	2000	2100	1530	2050	2020	1800	2350	2170	2060	2000	1850
22	1880	2040	2150	1520	2050	2050	1600	2360	2170	2050	2000	1830
23	1880	2000	1950	1320	2050	2110	1940	2350	2170	2050	1970	1940
24	1850	2000	1990	1340	2050	2110	1940	2360	2150	2050	1960	1940
25	1860	2050	---	2500	2050	2100	1950	2350	2170	2100	1960	1910
26	1870	2000	2000	2520	1820	2100	1930	2350	2170	2100	1960	1940
27	1870	2030	1970	2500	1800	2120	1940	2350	2180	2100	1960	1940
28	1830	2000	2030	2500	1800	2070	1940	2350	2110	2100	1960	1940
29	1830	2150	2040	2500	---	2120	1940	2350	2110	2100	1960	1940
30	1840	2150	1900	2500	---	2020	1950	2350	2100	1970	1970	1910
31	1840	---	1900	2550	---	2020	---	2330	---	1970	1970	---
MEAN	1890	1940	2070	1900	2120	1930	1800	2370	2190	2080	1960	1930

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	19.0	10.0	2.0	2.0	2.0	5.0	11.0	19.0	24.0	28.0	26.0	25.0
2	18.0	10.0	2.0	2.0	2.0	5.0	11.0	19.0	25.0	27.0	27.0	24.0
3	18.0	10.0	2.0	2.0	2.0	5.0	11.0	18.0	25.0	23.0	27.0	24.0
4	17.0	10.0	2.0	2.0	2.0	5.0	10.0	18.0	27.0	23.0	27.0	24.0
5	17.0	10.0	2.0	2.0	2.0	7.0	11.0	17.0	27.0	24.0	27.0	23.0
6	16.0	9.0	2.0	2.0	2.0	7.0	11.0	17.0	27.0	25.0	27.0	23.0
7	16.0	9.0	2.0	2.0	1.0	8.0	12.0	18.0	27.0	26.0	26.0	22.0
8	16.0	9.0	2.0	2.0	1.0	9.0	12.0	18.0	27.0	27.0	26.0	22.0
9	15.0	9.0	2.0	2.0	1.0	9.0	13.0	18.0	27.0	29.0	26.0	22.0
10	15.0	9.0	2.0	3.0	---	9.0	13.0	19.0	28.0	29.0	26.0	21.0
11	13.0	8.0	2.0	3.0	1.0	8.0	13.0	19.0	28.0	30.0	26.0	21.0
12	13.0	8.0	2.0	2.0	2.0	8.0	13.0	20.0	28.0	30.0	27.0	20.0
13	13.0	7.0	2.0	2.0	3.0	8.0	13.0	20.0	28.0	31.0	27.0	20.0
14	12.0	7.0	2.0	2.0	4.0	8.0	14.0	20.0	27.0	31.0	27.0	19.0
15	12.0	5.0	2.0	1.0	5.0	8.0	14.0	19.0	26.0	31.0	27.0	19.0
16	12.0	5.0	2.0	1.0	5.0	7.0	14.0	19.0	25.0	29.0	26.0	18.0
17	11.0	5.0	2.0	1.0	6.0	7.0	15.0	18.0	23.0	28.0	26.0	18.0
18	9.0	5.0	2.0	2.0	6.0	7.0	15.0	18.0	21.0	27.0	26.0	20.0
19	9.0	5.0	2.0	2.0	6.0	7.0	15.0	18.0	21.0	25.0	25.0	22.0
20	9.0	5.0	2.0	4.0	6.0	7.0	15.0	19.0	21.0	24.0	25.0	23.0
21	9.0	5.0	2.0	4.0	6.0	9.0	16.0	19.0	22.0	23.0	25.0	24.0
22	9.0	4.0	2.0	4.0	5.0	10.0	15.0	20.0	24.0	23.0	25.0	24.0
23	9.0	4.0	2.0	4.0	5.0	11.0	15.0	20.0	24.0	23.0	24.0	23.0
24	9.0	4.0	2.0	4.0	5.0	11.0	15.0	21.0	24.0	23.0	24.0	22.0
25	9.0	4.0	---	3.0	5.0	12.0	17.0	22.0	25.0	24.0	24.0	20.0
26	10.0	3.0	3.0	3.0	5.0	13.0	17.0	22.0	25.0	24.0	24.0	19.0
27	10.0	3.0	3.0	2.0	5.0	13.0	17.0	23.0	26.0	25.0	24.0	18.0
28	10.0	3.0	3.0	2.0	5.0	12.0	19.0	24.0	26.0	25.0	24.0	19.0
29	10.0	3.0	3.0	2.0	---	12.0	19.0	24.0	27.0	25.0	24.0	21.0
30	10.0	2.0	3.0	2.0	---	12.0	19.0	24.0	28.0	26.0	24.0	17.0
31	10.0	---	3.0	2.0	---	11.0	---	24.0	---	26.0	24.0	---
MEAN	12.5	6.5	2.0	2.5	3.5	8.5	14.0	20.0	25.5	26.5	25.5	21.0

06478515 MISSOURI RIVER NEAR GAYVILLE, SD

STAGE RECORDS

LOCATION.--Lat 42°51'01", long 97°13'12", in SW¼NW¼ sec.27, T.93 N., R.54 W., Yankton County, Hydrologic Unit 10170101, 3.8 mi (6.1 km) southwest of Gayville, 4.1 mi (6.6 km) downstream from James River and at mile 796.0 (1,280.8 km).

PERIOD OF RECORD.--October 1969 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft (335.280 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Stage regulated by Lewis and Clark Lake 15.0 mi (24.1 km) upstream (see station 06467000). Gage heights for period of October 1969 to September 1980 in files of Corps of Engineers.

GAGE HEIGHT (FEET ABOVE DATUM), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	49.46	49.37	47.25		---	47.45	50.92	49.78	49.47	49.65	49.59	49.61
2	49.46	49.36	47.25		---	47.45	49.89	49.96	49.53	49.66	49.53	49.65
3	49.49	49.36	47.36		---	47.46	49.83	49.87	49.50	49.65	49.55	49.61
4	49.49	49.35	47.33		---	47.43	49.80	49.79	49.47	49.54	49.50	49.66
5	49.51	49.34	47.28		---	47.44	49.79	49.74	49.45	49.42	49.54	49.68
6	49.51	49.34	47.24		---	47.41	49.85	49.69	49.51	49.42	49.48	49.69
7	49.52	49.34	47.22		---	47.42	49.79	49.69	49.55	49.43	49.37	49.66
8	49.52	49.35	47.28		---	47.40	49.77	49.73	49.53	49.41	49.31	49.61
9	49.53	49.34	47.23		---	47.40	49.79	49.71	49.59	49.44	49.22	49.62
10	49.52	49.33	47.30		---	47.40	49.77	49.71	49.63	49.51	49.14	49.63
11	49.49	49.45	47.26		---	47.38	49.81	49.80	49.67	49.57	49.11	49.65
12	49.50	49.52	47.21		---	47.03	49.85	49.75	49.62	49.63	49.09	49.73
13	49.52	49.73	47.11		---	47.33	49.82	49.71	49.66	49.69	49.10	49.72
14	49.50	49.74	47.10		---	47.38	49.80	49.65	49.66	49.71	49.12	49.71
15	49.52	49.73	47.11		---	47.35	49.75	49.62	49.44	49.74	49.00	49.73
16	49.53	49.73	---		---	47.49	49.70	49.62	49.07	49.75	48.90	49.78
17	49.47	49.72	---		---	47.89	49.66	49.63	48.90	49.83	48.86	49.83
18	49.45	49.72	---		---	48.35	49.67	49.64	48.93	49.86	48.84	49.84
19	49.41	49.72	---		47.53	48.82	49.67	49.57	49.19	49.83	48.80	49.84
20	49.41	49.72	---		47.54	49.26	49.64	49.40	49.25	49.84	48.76	49.83
21	49.42	49.73	---		47.51	49.63	49.65	49.36	49.31	49.81	48.70	49.83
22	49.38	49.76	---		47.48	50.00	49.65	49.31	49.33	49.80	48.66	49.84
23	49.40	49.72	---		47.47	50.36	49.66	49.23	49.44	49.75	48.58	49.84
24	49.36	49.54	---		47.49	50.36	49.70	49.22	49.45	49.67	48.54	49.85
25	49.35	49.13	---		47.47	50.36	49.70	49.22	49.48	49.61	48.50	49.84
26	49.33	48.77	---		47.48	50.34	49.70	49.23	49.53	49.56	48.45	49.78
27	49.35	48.47	---		47.48	50.42	49.71	49.31	49.60	49.47	48.38	49.75
28	49.32	48.19	---		47.45	50.40	49.69	49.37	49.65	49.41	49.51	49.78
29	49.24	47.85	---		---	50.34	49.75	49.39	49.65	49.49	50.18	49.76
30	49.26	47.47	---		---	50.32	49.75	49.39	49.67	49.60	49.87	49.78
31	49.26	---	---		---	50.15	---	49.42	---	49.65	49.62	---
TOTAL	1532.48	1478.89	---		---	1505.22	1493.53	1536.51	1483.73	1538.40	1522.82	1492.13
MEAN	49.43	49.30	---		---	48.56	49.78	49.56	49.46	49.63	49.12	49.74
MAX	49.53	49.76	---		---	50.42	50.92	49.96	49.67	49.86	50.18	49.85
MIN	49.24	47.47	---		---	47.03	49.64	49.22	48.90	49.41	48.38	49.61

06478515 MISSOURI RIVER NEAR GAYVILLE, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--
SUSPENDED SEDIMENT: October 1979 to current year.
BED MATERIAL: October 1979 to current year.

REMARKS.--Flow regulated by Lewis and Clark Lake 15.0 mi (24.1 km) upstream (see station 06467000). Samples collected 8.5 mi (13.7 km) downstream from gage. Several water-discharge measurements, and observations of water temperature and specific conductance were made during the year.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMPLING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOCITY, POINT (FPS) (81904)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
07...	1155	140	2.0	8.70	4.4	59	15	64	70	91	100	--
07...	1157	140	4.3	8.70	3.9	107	16	54	63	91	100	--
07...	1200	140	6.1	8.70	3.5	159	16	23	33	70	100	--
07...	1202	140	7.2	8.70	3.5	254	16	21	28	55	100	--
07...	1205	140	7.7	8.70	3.0	294	16	30	37	59	100	--
07...	1207	500	1.0	4.30	3.3	58	66	82	88	95	100	--
07...	1209	500	2.1	4.30	3.0	84	49	68	76	92	100	--
07...	1211	500	2.9	4.30	3.1	103	40	53	67	88	100	--
07...	1213	500	3.2	4.30	2.8	128	31	44	51	70	100	--
07...	1216	500	3.5	4.30	2.8	151	24	31	40	55	100	--
07...	1218	750	3.5	15.0	4.6	67	58	79	93	100	--	--
07...	1220	750	7.5	15.0	4.4	91	46	65	76	96	100	--
07...	1222	750	10	15.0	3.8	125	29	48	55	82	100	--
07...	1225	750	12	15.0	3.5	177	22	23	31	73	100	--
07...	1227	750	13	15.0	3.4	149	28	35	45	76	100	--
07...	1229	750	14	15.0	3.1	237	16	24	30	79	100	--
07...	1232	840	4.2	18.0	5.3	78	49	49	60	98	100	--
07...	1234	840	9.0	18.0	4.8	124	30	39	52	92	100	--
07...	1236	810	12	18.0	4.2	186	14	28	39	88	100	--
07...	1238	840	15	18.0	3.7	218	15	23	37	81	99	100
07...	1241	840	16	18.0	3.2	354	11	20	28	73	100	--
07...	1243	840	17	18.0	2.0	424	8	14	20	72	100	--
07...	1245	940	4.6	20.0	5.3	58	63	80	93	100	--	--
07...	1248	940	10	20.0	4.6	49	53	78	88	99	100	--
07...	1250	940	14	20.0	4.1	78	45	70	83	99	100	--
07...	1252	940	16	20.0	3.5	104	31	37	49	83	100	--
07...	1256	940	18	20.0	3.1	112	20	28	40	59	100	--
07...	1300	940	18	20.0	2.7	137	20	24	37	65	100	--
APR												
21...	1240	140	3.0	12.9	4.2	81	68	81	90	98	100	--
21...	1244	140	6.4	12.9	3.9	95	45	54	60	84	100	--
21...	1247	140	9.1	12.9	3.8	182	29	35	41	61	100	--
21...	1250	140	10	12.9	3.1	216	19	23	26	44	100	--
21...	1254	140	11	12.9	2.8	268	7	9	13	48	99	100
21...	1258	300	2.3	9.90	3.9	31	13	20	38	97	100	--
21...	1301	300	4.9	9.90	3.6	62	13	28	41	91	100	--
21...	1305	300	7.0	9.90	3.3	82	13	21	31	76	100	--
21...	1309	300	8.2	9.90	2.8	139	13	31	40	82	100	--
21...	1312	300	8.8	9.90	2.8	156	13	21	25	63	100	--
21...	1315	520	1.8	7.70	3.4	95	63	66	72	98	100	--
21...	1318	520	3.8	7.70	3.1	117	43	50	53	95	100	--
21...	1322	520	5.4	7.70	2.7	161	27	30	35	87	100	--
21...	1326	520	6.3	7.70	1.6	239	25	30	33	67	99	100
21...	1329	520	6.8	7.70	1.4	258	16	17	20	60	99	100
21...	1332	770	2.6	11.2	3.5	61	88	91	97	100	--	--
21...	1340	770	5.6	11.2	3.2	71	81	84	88	100	--	--
21...	1343	770	8.0	11.2	2.7	94	61	65	69	100	--	--
21...	1346	770	9.3	11.2	2.6	111	42	52	57	96	100	--
21...	1350	770	10	11.2	2.3	172	32	40	43	92	100	--
21...	1354	910	3.9	16.8	4.0	57	90	93	96	96	100	--
21...	1357	910	8.4	16.8	3.7	83	76	83	90	100	--	--
21...	1400	910	12	16.8	3.1	105	67	72	77	99	100	--
21...	1404	910	14	16.8	2.9	127	37	46	53	95	100	--
21...	1409	910	15	16.8	2.6	193	24	27	31	87	100	--
21...	1415	910	15	16.8	2.3	266	15	15	18	73	100	--

BEST DOCUMENT AVAILABLE

06478515 MISSOURI RIVER NEAR GAYVILLE, SD--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	SAMPLING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET) (81903)	STREAM VELOCITY, POINT (FPS) (81904)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
JUN												
09...	1340	160	3.4	14.8	3.9	21	48	48	62	100	--	--
09...	1344	160	7.3	14.8	3.7	13	48	48	70	100	--	--
09...	1348	160	10	14.8	3.3	9	48	48	60	96	100	--
09...	1352	160	12	14.8	3.1	130	48	48	54	87	100	--
09...	1356	160	13	14.8	2.7	220	48	48	51	73	100	--
09...	1400	280	2.9	12.4	3.8	48	47	56	67	100	--	--
09...	1404	280	6.2	12.4	3.7	50	34	50	55	93	100	--
09...	1408	280	8.9	12.4	3.0	87	32	39	44	92	100	--
09...	1412	520	1.5	6.50	3.4	44	51	63	70	100	--	--
09...	1416	520	3.2	6.50	3.1	61	36	40	45	96	100	--
09...	1420	520	4.6	6.50	2.6	110	21	22	26	73	100	--
09...	1424	520	5.3	6.50	2.1	168	15	17	21	67	100	--
09...	1428	520	5.8	6.50	2.5	169	13	14	17	62	99	100
09...	1432	850	2.5	11.1	3.7	47	63	75	78	91	100	--
09...	1436	850	5.5	11.1	3.5	34	62	62	75	100	--	--
09...	1440	850	7.9	11.1	3.2	43	45	45	60	100	--	--
09...	1444	850	9.2	11.1	2.8	60	31	31	35	71	100	--
09...	1448	850	9.9	11.1	2.6	63	32	38	44	95	100	--
09...	1452	990	3.6	15.7	4.0	38	80	87	100	--	--	--
09...	1456	990	7.8	15.7	3.7	35	64	78	87	95	100	--
09...	1500	990	11	15.7	3.2	46	46	56	64	86	89	100
09...	1504	990	13	15.7	3.1	48	32	32	39	58	90	96
09...	1510	990	14	15.7	2.8	66	35	35	42	95	100	--
09...	1515	990	14	15.7	2.5	73	28	35	39	98	100	--
JUL												
21...	1315	75	3.8	16.6	3.6	66	66	70	77	100	--	--
21...	1320	75	8.3	16.6	3.3	84	53	57	63	100	--	--
21...	1324	75	11	16.6	2.7	144	34	39	48	99	100	--
21...	1329	75	13	16.6	2.5	107	45	58	63	100	--	--
21...	1333	75	14	16.6	2.4	132	36	46	52	100	--	--
21...	1338	75	15	16.6	2.2	235	18	20	27	98	100	--
21...	1343	230	2.4	10.3	3.7	126	38	40	47	60	100	--
21...	1347	230	5.1	10.3	3.4	72	72	78	82	97	100	--
21...	1352	230	7.3	10.3	3.2	33	33	43	60	90	100	--
21...	1356	230	8.5	10.3	2.7	70	54	55	71	93	100	--
21...	1401	230	9.2	10.3	2.2	85	51	51	61	87	100	--
21...	1406	450	1.6	6.80	4.0	63	61	61	70	97	100	--
21...	1410	450	3.4	6.80	3.6	83	50	53	62	87	99	100
21...	1415	450	4.9	6.80	3.2	112	34	35	41	71	100	--
21...	1419	450	5.7	6.80	3.0	134	29	29	34	67	100	--
21...	1424	450	6.1	6.80	2.5	191	18	19	24	59	100	--
21...	1429	740	2.2	9.50	4.5	43	30	36	60	100	--	--
21...	1433	740	4.7	9.50	4.0	80	30	31	41	93	100	--
21...	1438	740	6.7	9.50	3.5	121	30	30	35	65	100	--
21...	1442	740	7.8	9.50	2.8	264	30	31	33	57	98	100
21...	1447	850	3.8	16.4	4.5	71	54	57	64	85	97	100
21...	1452	850	8.2	16.4	4.1	72	67	70	76	95	100	--
21...	1457	850	11	16.4	3.6	90	52	55	62	96	100	--
21...	1501	850	13	16.4	3.2	83	56	58	65	96	100	--
21...	1508	850	14	16.4	3.0	123	30	32	40	94	100	--
21...	1515	850	15	16.4	2.7	129	29	30	38	86	100	--
SEP												
01...	1335	80	2.3	10.1	4.2	73	62	62	66	89	100	--
01...	1338	80	5.0	10.1	3.7	84	41	41	47	70	100	--
01...	1342	80	7.1	10.1	3.5	138	38	41	43	59	99	100
01...	1345	80	8.3	10.1	3.3	297	17	17	20	42	100	--
01...	1348	80	9.0	10.1	3.4	459	14	15	16	45	99	100
01...	1352	330	1.3	5.40	3.4	244	22	23	26	45	99	100
01...	1355	330	2.7	5.40	3.0	102	41	42	46	68	100	--
01...	1358	330	3.6	5.40	2.6	124	36	37	42	64	100	--
01...	1401	330	4.2	5.40	2.5	178	28	30	36	59	100	--
01...	1405	330	4.5	5.40	2.6	187	35	35	39	67	100	--
01...	1408	650	2.9	12.5	4.0	55	67	67	74	92	100	--
01...	1411	650	6.2	12.5	3.6	77	47	53	61	90	99	100
01...	1415	650	8.9	12.5	3.1	102	35	37	45	76	100	--
01...	1418	650	10	12.5	3.0	132	37	40	46	74	100	--
01...	1421	650	11	12.5	2.3	171	35	37	43	67	100	--
01...	1424	750	2.9	12.6	4.6	94	52	52	77	95	100	--
01...	1428	750	6.3	12.6	4.5	87	58	65	71	100	--	--
01...	1431	750	9.0	12.6	3.4	110	45	45	52	95	100	--
01...	1434	750	10	12.6	3.4	169	23	25	29	68	99	100
01...	1438	750	11	12.6	3.1	160	27	27	39	70	100	--
01...	1441	860	3.5	15.0	4.5	26	39	39	50	84	100	--
01...	1444	860	7.5	15.0	4.1	10	39	39	54	88	100	--
01...	1447	860	10	15.0	4.0	15	39	39	39	100	--	--
01...	1450	860	12	15.0	3.6	39	39	39	49	85	100	--
01...	1453	860	13	15.0	2.9	104	39	39	42	56	97	100
01...	1456	860	14	15.0	3.0	305	39	40	43	54	93	100

06478515 MISSOURI RIVER NEAR GAYVILLE, SD--Continued

PARTICLE-SIZE OF BED MATERIAL, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOC- ATION, CROSS SECTION (FT FM L BANK) (00009)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
07...	1305	140	--	0	10	78	97	100	--	--	--	--
07...	1310	500	--	0	6	86	100	100	--	--	--	--
07...	1315	750	--	0	5	59	97	98	99	99	100	--
07...	1320	840	--	0	9	39	92	94	97	99	99	100
07...	1325	940	--	0	1	21	81	83	91	96	99	100
APR												
21...	1419	140	--	0	4	67	93	93	95	97	99	100
21...	1421	300	--	0	7	48	78	82	89	95	97	100
21...	1427	770	--	0	17	68	92	94	96	98	100	--
21...	1430	910	--	0	6	68	98	98	99	100	--	--
JUN												
09...	1518	160	--	0	5	62	97	98	99	99	100	--
09...	1521	280	--	0	2	21	48	78	88	96	99	100
09...	1524	520	--	0	6	42	77	85	91	96	99	100
09...	1527	850	--	0	4	29	69	82	86	98	100	--
09...	1530	990	--	0	8	50	92	96	98	100	--	--
JUL												
21...	1518	75	0	1	60	99	100	100	--	--	--	--
21...	1521	230	--	0	7	85	97	98	99	99	99	100
21...	1524	450	--	0	9	42	72	73	81	90	97	100
21...	1527	740	--	0	3	29	68	70	84	95	99	100
21...	1530	850	--	0	8	75	98	98	99	99	100	--
SEP												
01...	1500	80	--	0	7	85	99	99	100	--	--	--
01...	1503	330	--	0	7	70	93	93	97	98	99	99
01...	1506	650	--	0	7	67	91	91	96	99	100	--
01...	1509	750	--	0	7	64	88	88	93	97	100	--
01...	1512	860	--	0	4	55	93	95	98	100	--	--

06478526 MISSOURI RIVER NEAR MASKELL, NE

WATER-QUALITY RECORDS

LOCATION.--Lat 42°43'02", long 96°57'20", in NW¼SW¼ sec.27, T.32 N., R.4 E., Dixon County, Hydrologic Unit 10170101, 2.3 mi (3.7 km) northeast of Maskell, 24.3 mi (39.1 km) downstream from James River, 3.8 mi (6.1 km) upstream from Vermillion River and at mile 775.8 (1,248.3 km).

PERIOD OF DAILY RECORD.--
STAGE: September 1967 to current year.

PERIOD OF RECORD.--
SUSPENDED SEDIMENT: October 1979 to current year.
BED MATERIAL: October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,100.00 ft (335.280 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Flow regulated by Lewis and Clark Lake 33.2 mi (56.6 km) upstream (see station 06467000). Gage heights only in files of Corps of Engineers for period September 1967 to September 1981. Several water-discharge measurements, and observations of water temperature and specific conductance were made during the year.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
08...	1230	320	3.2	13.9	4.0	109	7	8	25	78	100	--
08...	1233	320	6.9	13.9	3.8	220	7	14	26	77	100	--
08...	1236	320	9.9	13.9	3.5	357	7	10	20	50	100	--
08...	1240	320	11	13.9	3.2	630	7	12	21	55	100	--
08...	1243	320	12	13.9	2.9	836	7	11	18	63	100	--
08...	1246	440	4.5	19.5	5.5	143	22	25	40	90	100	--
08...	1249	440	9.7	19.5	5.3	208	16	43	55	79	98	100
08...	1252	440	13	19.5	3.9	240	17	28	42	76	100	--
08...	1256	440	16	19.5	3.1	309	11	28	37	64	100	--
08...	1259	440	17	19.5	3.0	426	11	26	44	66	96	100
08...	1302	440	18	19.5	2.0	604	6	10	14	38	96	100
08...	1305	500	4.9	21.2	6.2	133	34	58	73	98	100	--
08...	1308	500	10	21.2	6.0	133	33	47	65	100	--	--
08...	1312	500	15	21.2	5.0	162	26	30	54	86	96	100
08...	1315	500	17	21.2	4.1	198	22	38	50	76	93	100
08...	1318	500	19	21.2	3.7	194	21	25	40	72	93	100
08...	1321	500	20	21.2	3.1	287	15	24	34	68	92	100
08...	1324	500	20	21.2	2.9	351	9	24	34	58	77	100
08...	1328	560	4.9	21.4	6.4	71	51	70	87	100	--	--
08...	1331	560	10	21.4	5.2	123	32	66	73	97	100	--
08...	1334	560	15	21.4	4.1	158	23	31	45	68	100	--
08...	1337	560	17	21.4	3.2	204	17	20	35	65	100	--
08...	1340	560	19	21.4	2.9	202	15	19	29	87	100	--
08...	1344	560	20	21.4	2.4	260	10	12	22	68	100	--
08...	1347	560	20	21.4	2.0	494	7	18	23	63	100	--
08...	1350	700	2.5	10.7	5.7	58	67	76	86	99	100	--
08...	1353	700	5.3	10.7	4.2	80	48	69	81	94	100	--
08...	1356	700	7.6	10.7	3.5	98	39	44	54	62	100	--
08...	1401	700	8.8	10.7	3.4	112	21	30	44	71	100	--
08...	1405	700	9.5	10.7	3.3	142	26	48	58	82	100	--
APR												
22...	1420	360	2.7	11.6	3.9	162	34	55	66	95	100	--
22...	1424	360	5.8	11.6	3.4	206	19	30	43	85	100	--
22...	1429	360	8.3	11.6	2.9	308	15	17	24	75	100	--
22...	1433	360	9.7	11.6	2.6	1060	4	4	6	47	100	--
22...	1437	360	10	11.6	2.7	975	2	5	8	63	100	--
22...	1442	465	4.4	19.0	5.1	75	4	19	40	91	100	--
22...	1446	465	9.5	19.0	4.6	104	4	9	25	73	100	--
22...	1450	465	13	19.0	4.2	197	4	15	27	53	99	100
22...	1454	465	15	19.0	3.3	343	4	9	15	40	99	100

06478526 MISSOURI RIVER NEAR MASKELL, NE--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
APR												
22...	1459	465	17	19.0	2.6	315	4	8	15	43	100	--
22...	1503	465	17	19.0	1.7	406	4	5	8	39	99	100
22...	1507	540	5.0	21.8	5.4	119	64	68	77	100	--	--
22...	1512	540	10	21.8	5.5	112	62	67	75	100	--	--
22...	1516	540	15	21.8	5.1	125	63	66	76	88	100	--
22...	1520	540	18	21.8	4.4	102	52	76	85	100	--	--
22...	1524	540	19	21.8	4.3	98	47	56	72	98	100	--
22...	1529	540	20	21.8	3.6	125	55	62	71	98	100	--
22...	1533	540	21	21.8	3.6	132	54	63	75	99	100	--
22...	1537	580	5.1	22.2	5.8	75	69	72	85	100	--	--
22...	1542	580	11	22.2	5.0	120	64	92	95	100	--	--
22...	1546	580	15	22.2	3.5	119	50	55	67	96	100	--
22...	1550	580	18	22.2	2.3	172	44	47	59	91	100	--
22...	1555	580	20	22.2	2.2	160	33	47	61	89	100	--
22...	1559	580	20	22.2	1.1	228	26	33	46	72	100	--
22...	1603	580	21	22.2	.89	259	20	22	35	65	100	--
22...	1607	690	2.6	11.4	5.4	69	74	91	97	99	100	--
22...	1612	690	5.7	11.4	5.1	70	75	84	97	100	--	--
22...	1616	690	8.1	11.4	4.9	79	86	88	97	100	--	--
22...	1621	690	9.5	11.4	4.0	73	86	89	100	--	--	--
22...	1625	690	10	11.4	4.0	63	65	65	98	100	--	--
JUN												
10...	1435	280	2.0	8.70	3.9	45	17	38	52	92	100	--
10...	1439	280	4.3	8.70	3.2	64	17	17	35	52	85	94
10...	1441	280	6.1	8.70	2.6	208	17	20	37	79	100	--
10...	1444	280	7.2	8.70	1.7	571	17	18	26	53	100	--
10...	1447	400	3.7	16.3	4.8	83	31	31	47	100	--	--
10...	1450	400	8.1	16.3	4.3	121	17	23	41	95	100	--
10...	1453	400	11	16.3	3.6	149	15	15	27	77	100	--
10...	1456	400	13	16.3	2.6	461	7	8	15	63	100	--
10...	1459	400	14	16.3	2.4	661	4	4	9	46	100	--
10...	1502	400	15	16.3	2.7	1142	2	2	5	39	99	100
10...	1505	480	4.4	19.0	5.4	51	48	56	75	99	100	--
10...	1508	480	9.5	19.0	5.2	46	44	50	73	100	--	--
10...	1511	480	13	19.0	4.7	57	36	37	61	87	100	--
10...	1514	480	15	19.0	3.8	90	23	25	37	68	97	100
10...	1517	480	17	19.0	3.7	127	15	20	30	50	96	100
10...	1520	480	17	19.0	3.3	182	11	11	16	22	93	100
10...	1523	545	5.2	22.5	5.5	35	61	67	93	100	--	--
10...	1526	545	11	22.5	5.4	34	65	75	90	99	100	--
10...	1529	545	16	22.5	4.0	50	54	63	76	97	100	--
10...	1532	545	18	22.5	3.2	59	32	37	57	97	100	--
10...	1535	545	20	22.5	2.8	47	61	61	73	100	--	--
10...	1538	545	21	22.5	2.4	75	29	30	42	96	100	--
10...	1541	650	2.7	11.6	5.0	30	75	94	97	100	--	--
10...	1544	650	5.8	11.6	4.9	39	72	78	98	100	--	--
10...	1549	650	8.3	11.6	4.2	46	52	60	98	100	--	--
10...	1553	650	9.7	11.6	3.8	49	44	50	93	98	100	--
10...	1556	650	10	11.6	3.5	58	39	39	84	100	--	--
JUL												
22...	1315	275	1.7	7.30	3.1	160	54	63	70	98	100	--
22...	1319	275	3.7	7.30	2.9	167	60	61	74	100	--	--
22...	1324	275	5.3	7.30	2.7	252	28	32	47	100	--	--
22...	1328	275	5.8	7.30	2.6	363	20	23	34	99	--	--
22...	1332	425	4.0	17.5	5.0	128	50	53	60	100	--	--
22...	1336	425	8.7	17.5	4.8	121	60	63	67	95	100	--
22...	1341	425	12	17.5	4.6	156	32	36	46	87	100	--
22...	1345	425	14	17.5	4.3	268	24	26	32	66	100	--
22...	1349	425	15	17.5	4.0	291	22	23	30	73	100	--
22...	1354	425	16	17.5	3.6	518	10	10	14	70	100	--
22...	1358	505	5.1	22.0	5.3	59	72	75	85	96	100	--
22...	1402	505	11	22.0	5.6	87	60	60	71	96	100	--
22...	1407	505	15	22.0	5.3	79	57	60	72	100	--	--
22...	1411	505	18	22.0	4.6	128	49	51	60	86	100	--
22...	1415	505	19	22.0	3.9	121	43	47	56	87	100	--
22...	1420	505	20	22.0	3.4	192	31	34	43	63	99	100
22...	1424	505	21	22.0	3.0	423	18	20	24	39	100	--
22...	1428	550	5.5	23.7	6.0	45	57	62	79	91	100	--
22...	1432	550	11	23.7	5.8	69	57	61	69	87	100	--
22...	1437	550	17	23.7	4.2	37	56	58	66	96	100	--
22...	1441	550	19	23.7	2.8	43	57	57	63	94	97	100
22...	1445	550	21	23.7	2.2	192	57	59	68	100	--	--
22...	1450	550	22	23.7	2.2	260	57	58	65	98	100	--
22...	1454	655	2.8	12.2	5.6	65	89	89	94	98	100	--
22...	1458	655	6.1	12.2	5.3	82	71	83	90	100	--	--
22...	1502	655	8.7	12.2	4.6	74	60	64	79	98	100	--
22...	1507	655	10	12.2	4.1	115	59	65	78	100	--	--
22...	1511	655	11	12.2	3.8	167	39	44	56	97	100	--

06478526 MISSOURI RIVER NEAR MASKELL, NE--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	2 STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
SEP												
02...	1410	300	2.1	9.00	3.7	153	33	35	46	93	100	--
02...	1414	300	4.5	9.00	3.4	327	15	20	37	92	100	--
02...	1417	300	6.4	9.00	3.1	364	11	17	30	89	100	--
02...	1420	300	7.5	9.00	3.3	448	10	13	25	89	100	--
02...	1424	300	8.1	9.00	2.9	530	10	12	28	94	100	--
02...	1428	405	4.4	19.3	5.4	139	31	35	48	95	100	--
02...	1431	405	9.6	19.3	4.9	122	44	44	45	49	55	82
02...	1434	405	13	19.3	4.5	172	35	37	47	79	100	--
02...	1438	405	16	19.3	4.3	206	26	27	35	61	100	--
02...	1442	405	17	19.3	3.7	415	13	15	20	56	99	100
02...	1445	405	18	19.3	3.7	549	6	6	10	53	99	100
02...	1448	465	5.5	23.3	5.6	82	56	76	80	95	100	--
02...	1452	465	11	23.3	5.8	79	44	48	61	95	100	--
02...	1456	465	16	23.3	5.4	78	69	77	83	96	100	--
02...	1459	465	19	23.3	4.9	105	43	49	58	85	100	--
02...	1502	465	20	23.3	4.2	173	28	30	37	50	92	100
02...	1506	465	21	23.3	3.9	314	20	21	25	35	95	100
02...	1510	465	22	23.3	3.7	415	12	14	17	24	85	100
02...	1513	510	4.9	21.5	6.1	116	41	54	57	66	92	100
02...	1516	510	10	21.5	5.4	74	63	67	79	92	100	--
02...	1520	510	15	21.5	4.5	76	61	63	74	97	100	--
02...	1524	510	17	21.5	3.2	106	56	57	64	98	100	--
02...	1527	510	19	21.5	2.4	179	31	32	42	91	100	--
02...	1530	610	2.7	11.7	5.8	17	56	61	83	100	--	--
02...	1534	610	5.8	11.7	5.2	37	56	56	80	97	100	--
02...	1538	610	8.3	11.7	4.3	66	56	60	75	98	100	--
02...	1541	610	9.7	11.7	4.0	69	56	60	71	95	100	--
02...	1545	610	10	11.7	3.5	97	56	59	73	96	100	--

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
08...	1408	320	--	0	41	97	100	100	--	--	--	--
08...	1411	440	--	0	4	71	100	--	--	--	--	--
08...	1417	560	0	8	69	97	100	100	--	--	--	--
APR												
22...	1633	360	--	0	15	98	100	--	--	--	--	--
22...	1636	465	--	0	2	62	94	99	100	--	--	--
22...	1639	540	--	0	2	6	23	28	40	58	81	68
JUN												
10...	1603	280	--	0	4	89	100	--	--	--	--	--
10...	1606	400	--	0	7	86	100	--	--	--	--	--
10...	1612	545	--	0	10	17	39	48	77	96	100	--
10...	1615	650	31	48	72	91	98	--	--	--	--	--
JUL												
22...	1518	275	0	2	61	99	100	--	--	--	--	--
22...	1521	425	0	1	27	98	100	100	--	--	--	--
22...	1527	550	69	83	96	99	100	--	--	--	--	--
22...	1530	655	30	48	75	97	100	--	--	--	--	--
SEP												
02...	1548	300	0	1	73	100	--	--	--	--	--	--
02...	1551	405	--	0	4	80	100	100	--	--	--	--
02...	1554	465	24	40	78	100	--	--	--	--	--	--
02...	1557	510	--	0	27	79	93	--	--	--	--	--
02...	1600	610	40	72	95	100	--	--	--	--	--	--

06478540 LITTLE VERMILLION RIVER NEAR SALEM, SD
(Hydrologic bench-mark station)

LOCATION.--Lat 43°47'39", long 97°22'02", in SW¼ sec.19, T.104 N., R.54 W., McCook County, Hydrologic Unit 10170102, on right wingwall at downstream end of culvert on county highway, 2.0 mi (3.2 km) upstream from small left-bank tributary and 5.2 mi (8.4 km) northeast of Salem.

DRAINAGE AREA.--51.0 mi² (132 km²), approximately.

PERIOD OF RECORD.--October 1966 to current year.

GAGE.--Water-stage recorder and concrete dam.

REMARKS.--Records good.

AVERAGE DISCHARGE.--15 years, 1.97 ft³/s (0.056 m³/s), 1,430 acre-ft/yr (1.76 hm³/yr); median of yearly mean discharges, 1.1 ft³/s (0.03 m³/s), 800 acre-ft/yr (0.99hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 676 ft³/s (19.1 m³/s) Mar. 21, 1978, gage height, 7.79 ft (2.374 m); maximum gage height, 8.53 ft (2.600 m) Apr. 5, 1969 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--No flow during year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
30	.00	.00	.00	.00	---	.00	.00	.00	.00	.00	.00	.00
31	.00	---	.00	.00	---	.00	---	.00	---	.00	.00	---
TOTAL	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MEAN	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
MAX	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
MIN	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
AC-FT	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

CAL YR 1980 TOTAL 29.94 MEAN .082 MAX 2.8 MIN .00 AC-FT 59
WTR YR 1981 TOTAL 0.00 MEAN .000 MAX .00 MIN .00 AC-FT .00

06478690 WEST FORK VERMILLION RIVER NEAR PARKER, SD

LOCATION.--Lat 43°24'55", long 97°12'18", in NE¼NE¼ sec.10, T.99 N., R.54 W., Turner County, Hydrologic Unit 10170102, on left downstream wingwall of bridge, 3.7 mi (6.0 km) northwest of Parker and 13.9 mi (22.4 km) upstream from confluence with East Fork Vermillion River.

DRAINAGE AREA.--370 mi² (958 km²), approximately.

PERIOD OF RECORD.--August 1961 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,340 ft (408 m), from topographic map. Prior to Oct. 11, 1973, nonrecording gage and crest-stage gage at same site and datum.

REMARKS.--Records fair except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--20 years, 20.0 ft³/s (0.566 m³/s), 14,490 acre-ft/yr (17.9 hm³/yr); median of yearly mean discharges, 7.6 ft³/s (0.22 m³/s), 5,500 acre-ft/yr (6.8 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 4,340 ft³/s (123 m³/s) Mar. 28, 1962, gage height, 12.33 ft (3.758 m); no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9.0 ft³/s (0.25 m³/s) at 2100 hours, July 3, gage height, 1.32 ft (0.402 m), no peak above base of 150 ft³/s (4.25 m³/s); maximum gage height, 1.38 ft (0.421 m) Feb. 16 (backwater from ice); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 24 to Mar. 12)

0.74	0
0.80	.07
0.90	.52
1.0	1.73

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.00	.04	.00	.00	.00	.02	.04	.00	.00	.03	.01	.00
2	.00	.04	.00	.00	.00	.02	.04	.00	.00	.04	.00	.00
3	.00	.03	.00	.00	.00	.02	.04	.00	.00	1.6	.00	.00
4	.00	.03	.00	.00	.00	.01	.05	.00	.00	.70	.00	.00
5	.00	.03	.00	.00	.00	.01	.04	.00	.00	.14	.00	.00
6	.00	.02	.00	.00	.00	.01	.02	.00	.00	.07	.00	.00
7	.00	.01	.00	.00	.00	.01	.02	.00	.00	.05	.00	.02
8	.00	.03	.00	.00	.00	.01	.02	.00	.00	.07	.00	.02
9	.00	.04	.00	.00	.00	.01	.02	.00	.00	.07	.00	.02
10	.00	.05	.00	.00	.00	.01	.02	.00	.01	.05	.00	.02
11	.00	.05	.00	.00	.00	.02	.02	.01	.01	.07	.00	.00
12	.00	.05	.00	.00	.00	.02	.01	.01	.01	.10	.00	.00
13	.00	.05	.02	.00	.00	.01	.00	.01	.01	.12	.00	.00
14	.00	.04	.02	.00	.00	.02	.00	.01	.01	.07	.00	.00
15	.00	.04	.02	.00	.01	.02	.01	.01	.01	.05	.00	.00
16	.01	.04	.01	.00	.04	.03	.01	.01	.01	.05	.00	.00
17	.01	.05	.00	.00	.03	.01	.02	.01	.00	.04	.00	.00
18	.01	.05	.00	.00	.02	.02	.02	.01	.00	.04	.00	.00
19	.01	.05	.00	.01	.01	.02	.02	.01	.00	.04	.00	.00
20	.01	.04	.00	.02	.01	.03	.01	.00	.00	.03	.00	.00
21	.02	.04	.00	.02	.00	.03	.01	.00	.00	.03	.00	.00
22	.02	.04	.00	.02	.00	.03	.01	.00	.01	.02	.00	.00
23	.02	.04	.00	.02	.00	.02	.01	.00	.01	.02	.00	.00
24	.03	.04	.00	.01	.00	.02	.01	.00	.01	.02	.00	.00
25	.03	.04	.00	.00	.00	.03	.01	.00	.01	.02	.00	.00
26	.04	.04	.00	.00	.00	.03	.01	.00	.02	.02	.00	.00
27	.04	.04	.00	.00	.00	.03	.01	.00	.02	.02	.00	.00
28	.05	.04	.00	.00	.01	.03	.01	.00	.02	.01	.00	.00
29	.05	.03	.00	.00	---	.03	.00	.00	.03	.01	.00	.00
30	.04	.02	.00	.00	---	.03	.00	.00	.03	.00	.00	.00
31	.04	---	.00	.00	---	.03	---	.00	---	.00	.00	---
TOTAL	.43	1.15	.07	.10	.13	.64	.51	.09	.23	3.60	.01	.08
MEAN	.014	.038	.002	.003	.005	.021	.017	.003	.008	.12	.000	.003
MAX	.05	.05	.02	.02	.04	.03	.05	.01	.03	1.6	.01	.02
MIN	.00	.01	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
AC-FT	.9	2.3	.1	.2	.3	1.3	1.0	.2	.5	7.1	.02	.2

CAL YR 1980 TOTAL 835.59 MEAN 2.28 MAX 40 MIN .00 AC-FT 1660
WTR YR 1981 TOTAL 7.04 MEAN .019 MAX 1.6 MIN .00 AC-FT 14

06479000 VERMILLION RIVER NEAR WAKONDA, SD

LOCATION.--Lat 42°59'27", long 96°57'49", in SW¼NW¼ sec.2, T.94 N., R.52 W., Clay County, Hydrologic Unit 10170102, on left bank 40 ft (12 m) downstream from bridge on State Highway 19, 4.3 mi (6.9 km) downstream from Frog Creek, 7.4 mi (11.9 km) southeast of Wakonda, and 29.6 mi (47.6 km) upstream from mouth.

DRAINAGE AREA.--1,680 mi^2 (4,351 km^2), approximately.

PERIOD OF RECORD.--October 1945 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,150.9 ft (350.79 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Sept. 2, 1954, nonrecording gage and crest-stage gage at site 40 ft (12 m) upstream at same datum. Since Dec. 27, 1951, supplementary nonrecording gage on relief bridge.

REMARKS.--Records fair Oct. 1 to Feb. 23, Apr. 16 to Sept. 30 and poor Feb. 24 to Apr. 15. At times during periods of high stage, part of flow leaves main channel through levee breaks and bypasses gage through overflow channel on left bank. Several observations of water temperature and specific conductance were made during the year. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--36 years, 108 ft^3/s (3.059 m^3/s), 78,250 acre-ft/yr (96.5 hm^3/yr); median of yearly mean discharges, 77 ft^3/s (2.18 m^3/s), 55,800 acre-ft/yr (69 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 9,880 ft^3/s (280 m^3/s) Apr. 8, 1969; maximum gage height, 17.17 ft (5.233 m) Apr. 6, 1969; no flow at times in 1951, 1956-59, 1975-77, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 506 ft^3/s (14.3 m^3/s) at 1700 hours, June 14, gage height, 9.77 ft (2.978 m), backwater from ice and beaver dam, no peak above base of 1,000 ft^3/s (28.3 m^3/s); no flow Sept. 15-22.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	3.0	3.4	4.2	2.8	3.9	3.4	1.4	1.9	2.3	16	25	1.2
2	2.7	3.8	3.6	2.8	3.9	3.1	1.3	1.8	5.1	18	34	1.2
3	3.1	3.8	3.5	2.8	3.9	2.9	1.3	1.6	7.7	33	24	1.3
4	3.2	3.8	3.7	2.8	3.9	2.6	1.3	2.3	7.7	100	63	.93
5	3.4	3.7	4.1	2.8	3.9	2.4	1.3	2.0	6.0	79	49	.55
6	3.9	4.4	3.6	2.8	4.1	2.2	.75	1.0	4.6	48	12	.40
7	3.4	4.8	3.4	2.8	4.1	2.1	1.2	1.6	4.9	48	5.5	.50
8	3.7	5.4	3.0	2.8	4.1	2.0	1.6	2.1	4.3	34	3.0	.75
9	3.5	5.6	3.0	2.8	4.1	1.9	1.8	1.8	5.1	24	1.6	.75
10	2.9	6.0	3.1	2.8	4.1	1.7	2.1	1.6	6.0	17	.96	.45
11	3.0	3.2	3.2	2.8	4.1	1.6	2.1	1.7	6.0	12	.73	.27
12	3.0	1.8	3.4	3.0	4.1	1.5	2.5	2.3	7.4	9.0	1.3	.21
13	3.0	1.6	3.3	3.6	4.1	1.4	3.6	3.0	11	8.4	1.9	.15
14	2.6	2.4	3.2	3.9	4.1	1.4	4.1	3.2	375	10	5.4	.09
15	2.4	2.2	3.2	3.9	4.1	1.3	4.0	3.0	329	12	5.1	.00
16	3.2	2.4	3.2	3.9	5.4	1.3	4.9	2.1	195	14	4.1	.00
17	4.2	2.4	3.2	3.6	6.8	1.3	5.3	1.4	140	19	3.9	.00
18	2.9	2.5	3.2	3.6	8.1	1.2	5.8	1.8	76	22	3.0	.00
19	2.3	2.6	2.9	3.6	4.6	1.2	6.8	2.0	48	45	2.5	.00
20	2.2	2.8	2.8	3.6	3.9	1.2	7.1	2.1	33	27	2.5	.00
21	1.9	2.8	2.8	3.6	4.1	1.2	8.2	2.2	25	13	2.1	.00
22	2.1	3.0	2.8	3.6	4.1	1.1	7.3	2.5	19	7.7	1.2	.00
23	3.3	3.2	2.8	3.6	2.8	1.1	6.8	3.0	15	5.4	1.1	.40
24	3.4	3.2	2.8	3.6	4.3	1.1	7.2	1.9	20	6.0	2.0	.21
25	3.1	3.1	2.8	3.6	4.5	1.1	7.6	1.7	43	9.7	3.4	.21
26	2.9	3.4	2.8	3.6	4.8	1.1	7.3	1.3	16	11	5.5	.50
27	3.4	3.8	2.8	3.6	4.3	1.1	6.5	1.7	10	13	4.3	.50
28	3.6	3.9	2.8	3.6	3.8	3.0	4.9	1.4	11	15	4.3	.65
29	3.6	3.8	2.8	3.6	---	4.0	5.1	1.2	13	18	3.9	.60
30	3.4	4.4	2.8	3.6	---	5.7	2.3	1.7	13	18	4.1	.60
31	3.5	---	3.0	3.6	---	2.5	---	2.3	---	18	1.8	---
TOTAL	95.8	103.2	98.2	103.1	122.0	60.7	123.45	61.2	1459.1	730.2	282.19	12.42
MEAN	3.09	3.44	3.17	3.33	4.36	1.96	4.12	1.97	48.6	23.6	9.10	.41
MAX	4.2	6.0	4.2	3.9	8.1	5.7	8.2	3.2	375	100	63	1.3
MIN	1.9	1.6	2.8	2.8	2.8	1.1	.75	1.0	2.3	5.4	.73	.00
AC-FT	190	205	195	204	242	120	245	121	2890	1450	560	25

CAL YR 1980 TOTAL 12165.10 MEAN 33.2 MAX 256 MIN 1.0 AC-FT 24130
WTR YR 1981 TOTAL 3251.56 MEAN 8.91 MAX 375 MIN .00 AC-FT 6450

06479098 MISSOURI RIVER NEAR PONCA, NE

WATER-QUALITY RECORDS

LOCATION.--Lat 42°34'32", long 96°41'01", in SE¼NE¼ sec.14, T.30 N., R.6 E., Dixon County, Hydrologic Unit 10170101, 1.5 mi (2.4 km) northeast of Ponca, 21 mi (33.8 km) downstream from Vermillion River, 16.8 mi (27.0 km) upstream from Big Sioux River and at mile 751.0 (1,208.4 km).

PERIOD OF DAILY RECORD.--
STAGE: May 1974 to current year.

PERIOD OF RECORD.--
SUSPENDED SEDIMENT: October 1979 to current year.
BED MATERIAL: October 1979 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,090.00 ft (332.232 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers).

REMARKS.--Flow regulated by Lewis and Clark Lake 60.0 mi (96.5 km) upstream (see station 06467000). Gage heights only in files of Corps of Engineers for period May 1974 to September 1981. Several water-discharge measurements, and observations of water temperature and specific conductance were made during the year.

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOCATION, CROSS SECTION (FT FM L BANK) (00009)	SAMPLING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOCATION, TOTAL (FEET) (81903)	2 STREAM VELOCITY, POINT (FPS) (81904)	SEDIMENT, SUSPENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
OCT												
09...	1130	200	3.2	13.9	3.4	19	36	43	55	100	--	--
09...	1133	200	6.9	13.9	3.1	66	36	69	82	96	100	--
09...	1136	200	9.9	13.9	2.9	82	36	44	67	98	100	--
09...	1139	200	11	13.9	2.8	133	36	43	58	100	--	--
09...	1142	200	12	13.9	2.7	190	36	50	72	93	100	--
09...	1145	200	13	13.9	2.3	169	36	50	72	97	100	--
09...	1148	360	2.5	10.8	4.2	238	24	30	45	84	100	--
09...	1151	360	5.4	10.8	4.0	339	17	24	38	80	100	--
09...	1154	360	7.7	10.8	3.7	403	15	29	55	88	100	--
09...	1157	360	9.0	10.8	3.7	455	12	24	46	84	100	--
09...	1200	360	9.7	10.8	3.5	508	12	20	38	64	93	100
09...	1203	500	3.3	14.4	5.1	202	27	38	53	91	100	--
09...	1206	500	7.2	14.4	4.7	292	18	27	62	90	100	--
09...	1209	500	10	14.4	4.2	472	12	17	49	87	100	--
09...	1212	500	12	14.4	3.7	530	10	10	22	70	100	--
09...	1215	500	13	14.4	3.1	619	9	13	24	69	99	100
09...	1218	500	13	14.4	2.1	190	28	28	37	60	100	--
09...	1221	620	3.6	15.5	5.0	116	40	50	76	99	100	--
09...	1224	620	7.7	15.5	4.6	220	26	32	66	94	100	--
09...	1227	620	11	15.5	3.8	349	16	26	36	63	99	100
09...	1230	620	12	15.5	3.7	492	11	18	26	56	100	--
09...	1233	620	13	15.5	3.7	849	7	8	12	40	97	100
09...	1236	620	14	15.5	3.3	1570	4	4	7	34	94	100
09...	1239	740	3.3	14.4	4.6	86	60	64	80	97	100	--
09...	1242	740	7.2	14.4	4.1	107	48	67	79	100	--	--
09...	1245	740	10	14.4	3.7	137	39	67	76	98	100	--
09...	1248	740	12	14.4	3.4	160	35	53	78	97	100	--
09...	1251	740	13	14.4	3.2	185	28	51	61	96	100	--
09...	1254	740	13	14.4	2.9	207	26	38	50	90	100	--
APR												
23...	1210	190	2.6	11.2	3.9	197	22	43	61	99	100	--
23...	1214	190	5.6	11.2	3.6	338	15	21	33	96	100	--
23...	1218	190	8.0	11.2	3.2	612	9	17	27	86	100	--
23...	1221	190	9.3	11.2	2.8	728	9	14	22	86	100	--
23...	1225	190	10	11.2	2.4	775	8	11	17	85	100	--
23...	1229	340	2.8	11.0	4.4	148	7	38	61	97	100	--
23...	1233	340	6.1	11.0	3.9	198	7	26	46	86	100	--
23...	1237	340	8.7	11.0	3.4	346	7	10	23	70	100	--
23...	1240	340	10	11.0	3.4	411	7	8	20	69	100	--
23...	1244	340	11	11.0	1.3	809	7	12	19	41	94	100
23...	1248	500	3.1	13.4	4.3	157	30	39	62	95	100	--
23...	1252	500	6.7	13.4	4.0	231	22	34	55	83	100	--
23...	1256	500	9.6	13.4	3.4	264	15	26	47	79	100	--
23...	1259	500	11	13.4	2.9	322	13	20	41	77	100	--
23...	1303	500	12	13.4	2.9	472	9	10	20	65	100	--
23...	1307	500	12	13.4	2.5	701	8	14	22	54	100	--
23...	1311	620	3.6	15.5	3.9	138	36	47	69	100	--	--
23...	1315	620	7.7	15.5	3.5	151	34	53	75	100	--	--
23...	1318	620	11	15.5	3.3	139	16	24	48	97	100	--
23...	1322	620	12	15.5	3.2	278	17	49	68	97	100	--
23...	1326	620	13	15.5	2.8	359	13	21	39	92	100	--
23...	1330	620	14	15.5	2.5	305	14	19	38	92	100	--
23...	1334	740	4.3	18.6	3.5	115	41	60	80	99	100	--
23...	1337	740	9.4	18.8	3.3	130	32	54	79	100	--	--
23...	1341	740	13	18.8	2.9	166	28	40	66	100	--	--
23...	1345	740	15	18.8	2.7	213	27	34	60	100	--	--
23...	1349	740	16	18.8	2.5	250	24	35	64	100	--	--
23...	1353	740	17	18.8	2.3	383	15	21	44	97	100	--

BEST DOCUMENT AVAILABLE

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	SAMP-LING DEPTH (FT) (00003)	DEPTH AT SAMPLE LOC-ATION, TOTAL (FEET) (81903)	STREAM VELOC-ITY, POINT (FPS) (81904)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)	SED. SUSP. FALL DIAM. % FINER THAN 1.00 MM (70346)
JUN												
11...	1305	375	3.4	14.6	4.1	169	18	25	56	97	100	--
11...	1313	375	7.3	14.6	4.0	161	18	18	41	89	100	--
11...	1321	375	10	14.6	3.4	102	18	20	38	95	100	--
11...	1330	375	12	14.6	2.7	197	18	24	47	96	100	--
11...	1338	495	2.7	11.7	4.3	132	29	34	56	97	100	--
11...	1346	495	5.8	11.7	3.9	140	26	31	57	96	100	--
11...	1354	495	8.3	11.7	3.5	246	17	19	43	95	100	--
11...	1402	495	9.7	11.7	3.2	278	16	18	36	90	100	--
11...	1411	495	10	11.7	3.0	352	12	13	25	67	98	100
11...	1419	685	2.1	9.20	4.1	84	44	47	67	99	100	--
11...	1427	685	4.6	9.20	3.4	109	33	46	66	98	100	--
11...	1435	685	6.6	9.20	3.3	71	56	59	70	96	100	--
11...	1443	685	7.7	9.20	3.1	246	18	18	37	76	99	100
11...	1452	685	8.3	9.20	3.0	347	14	15	31	66	98	100
JUL												
23...	1215	130	3.0	12.8	4.0	101	77	87	95	100	--	--
23...	1218	130	6.4	12.8	3.5	104	78	84	93	100	--	--
23...	1221	130	9.1	12.8	2.9	138	63	71	78	100	--	--
23...	1224	130	10	12.8	2.7	140	45	50	60	97	100	--
23...	1227	130	11	12.8	2.4	172	41	50	60	98	100	--
23...	1230	130	12	12.8	2.3	242	32	36	49	96	100	--
23...	1234	245	3.4	14.7	4.4	127	61	68	81	99	100	--
23...	1237	245	7.3	14.7	3.9	161	41	49	56	91	100	--
23...	1240	245	10	14.7	3.4	207	32	36	47	91	100	--
23...	1243	245	12	14.7	3.2	260	23	27	36	84	100	--
23...	1246	245	13	14.7	2.8	637	10	10	13	76	100	--
23...	1249	245	13	14.7	2.9	1170	6	6	7	39	100	--
23...	1252	400	2.0	8.70	4.2	204	30	35	51	87	100	--
23...	1255	400	4.3	8.70	3.2	245	22	27	50	77	100	--
23...	1258	400	6.1	8.70	2.5	358	16	25	41	75	100	--
23...	1301	400	7.2	8.70	2.3	509	11	13	24	65	100	--
23...	1304	400	7.7	8.70	2.1	667	12	14	21	65	99	100
23...	1307	560	3.0	13.1	5.0	94	21	27	52	95	100	--
23...	1310	560	6.5	13.1	4.6	136	22	31	54	94	100	--
23...	1313	560	9.3	13.1	3.9	198	22	25	47	85	100	--
23...	1319	560	10	13.1	3.8	235	21	21	41	63	100	--
23...	1322	560	11	13.1	3.8	240	21	24	42	80	100	--
23...	1325	560	12	13.1	3.7	307	21	23	43	78	100	--
23...	1328	690	3.4	14.8	4.8	123	62	69	79	95	100	--
23...	1331	690	7.4	14.8	4.4	116	64	70	80	99	100	--
23...	1334	690	10	14.8	3.7	120	48	54	65	97	100	--
23...	1337	690	12	14.8	3.2	183	35	41	57	91	100	--
23...	1340	690	13	14.8	2.7	316	26	29	43	75	100	--
23...	1343	690	13	14.8	2.8	398	18	19	31	63	100	--
SEP												
03...	1245	240	1.2	5.30	3.2	165	36	38	47	79	100	--
03...	1248	240	2.6	5.30	3.0	290	17	18	24	69	100	--
03...	1251	240	3.5	5.30	2.8	491	12	12	16	72	100	--
03...	1253	240	4.0	5.30	2.7	1140	5	5	7	72	100	--
03...	1256	240	4.3	5.30	2.5	966	6	6	8	65	100	--
03...	1259	430	3.0	13.1	4.7	106	64	65	74	96	100	--
03...	1302	430	6.5	13.1	4.6	132	29	31	43	87	100	--
03...	1305	430	9.3	13.1	4.1	179	23	25	38	80	100	--
03...	1307	430	10	13.1	3.7	228	17	19	30	74	100	--
03...	1310	430	11	13.1	3.6	291	14	14	26	92	100	--
03...	1313	430	12	13.1	3.4	320	10	11	21	88	100	--
03...	1316	535	4.0	17.2	4.9	131	25	27	48	90	100	--
03...	1319	535	8.6	17.2	4.8	206	21	23	40	86	100	--
03...	1321	535	12	17.2	3.9	347	12	14	27	76	100	--
03...	1324	535	14	17.2	3.9	420	10	11	22	83	100	--
03...	1327	535	15	17.2	3.4	465	9	10	20	81	100	--
03...	1330	535	16	17.2	3.1	590	6	6	14	74	100	--
03...	1333	615	4.3	18.8	5.0	93	41	43	62	98	100	--
03...	1335	615	9.4	18.8	4.6	118	31	38	63	94	100	--
03...	1338	615	13	18.8	3.9	210	18	21	38	68	100	--
03...	1341	615	15	18.8	3.3	354	12	13	28	84	100	--
03...	1344	615	16	18.8	2.8	469	8	9	19	54	100	--
03...	1347	615	17	18.8	2.8	633	7	12	22	60	100	--
03...	1349	690	4.5	19.7	4.8	42	48	55	83	94	100	--
03...	1352	690	9.8	19.7	4.1	65	47	52	80	97	100	--
03...	1355	690	14	19.7	3.7	90	48	57	82	98	100	--
03...	1358	690	16	19.7	3.2	105	48	55	80	98	100	--
03...	1401	690	17	19.7	3.0	135	48	54	76	95	100	--
03...	1403	690	18	19.7	2.6	150	47	53	76	95	100	--

06479098 MISSOURI RIVER NEAR PONCA, NE--Continued

PARTICLE-SIZE DISTRIBUTION OF SUSPENDED SEDIMENT, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	SAMPLE LOC-ATION, CROSS SECTION (FT FM L BANK) (00009)	BED MAT. FALL DIAM. % FINER THAN .062 MM (80158)	BED MAT. FALL DIAM. % FINER THAN .125 MM (80159)	BED MAT. FALL DIAM. % FINER THAN .250 MM (80160)	BED MAT. FALL DIAM. % FINER THAN .500 MM (80161)	BED MAT. FALL DIAM. % FINER THAN 1.00 MM (80162)	BED MAT. SIEVE DIAM. % FINER THAN 2.00 MM (80169)	BED MAT. SIEVE DIAM. % FINER THAN 4.00 MM (80170)	BED MAT. SIEVE DIAM. % FINER THAN 8.00 MM (80171)	BED MAT. SIEVE DIAM. % FINER THAN 16.0 MM (80172)	BED MAT. SIEVE DIAM. % FINER THAN 32.0 MM (80173)
OCT												
09...	1257	200	0	1	42	87	100	100	--	--	--	--
09...	1300	360	--	0	20	90	100	99	99	99	100	--
09...	1303	500	--	0	16	90	100	99	100	--	--	--
09...	1306	620	--	0	6	25	66	69	81	90	99	100
09...	1309	740	--	0	12	61	100	100	--	--	--	--
APR												
23...	1400	190	--	0	34	93	100	100	--	--	--	--
23...	1403	340	--	0	7	73	99	99	99	100	--	--
23...	1406	500	--	0	5	39	84	87	93	98	100	--
23...	1409	620	--	0	15	89	99	99	100	--	--	--
23...	1412	--	0	2	33	65	100	99	100	--	--	--
JUN												
11...	1500	160	--	0	30	95	100	100	--	--	--	--
11...	1503	270	--	0	54	98	100	100	--	--	--	--
11...	1506	375	--	0	6	41	74	77	80	86	96	100
11...	1509	495	--	0	11	68	98	98	99	100	--	--
11...	1512	685	--	0	3	40	95	95	98	99	100	--
JUL												
23...	1345	130	--	0	85	96	99	99	100	--	--	--
23...	1348	245	--	0	40	99	100	--	--	--	--	--
23...	1351	400	--	0	15	90	100	100	--	--	--	--
23...	1354	560	--	0	5	85	99	99	99	99	100	--
23...	1357	640	--	0	3	63	96	99	100	--	--	--
SEP												
03...	1405	240	--	0	24	99	100	--	--	--	--	--
03...	1408	430	--	0	25	99	100	--	--	--	--	--
03...	1411	535	--	0	26	100	--	100	--	--	--	--
03...	1414	615	--	0	5	82	97	97	97	98	99	100
03...	1417	690	--	0	1	43	91	93	97	98	100	--

06479438 BIG SIOUX RIVER NEAR WATERTOWN, SD

LOCATION.--Lat 45°00'22", long 97°09'53", in NE¼NE¼NE¼ sec.16, T.118 N., R.52 W., Codington County, Hydrologic Unit 10170202, on left bank at downstream side of county highway bridge, 4.9 mi (7.9 km) downstream from Mahoney Creek, 6.5 mi (10.5 km) upstream from inlet-outlet to Lake Kampeska, and 7.5 mi (12.1 km) northwest of Watertown.

DRAINAGE AREA.--1,025 mi² (2,655 km²), approximately, revised.

PERIOD OF RECORD.--October 1972 to current year.

REVISED RECORDS.--WDR SD-78-1: 1973-74(M), 1976-77(M).

GAGE.--Water-stage recorder. Datum of gage is 1,725.81 ft (526.027 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--9 years, 19.7 ft³/s (0.558 m³/s), 14,270 acre-ft/yr (17.6 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,720 ft³/s (105 m³/s) Mar. 30, 1978, gage height, 11.07 ft (3.374 m); no flow at times in 1974-81.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 88 ft³/s (2.49 m³/s) at 0830 hours, June 15, gage height, 5.50 ft (1.676 m), no peak above base of 300 ft³/s (8.50 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.10	.23	.95	.33	.08	13	7.3	3.2	.22	2.3	.00	.03
2	.03	.24	.87	.29	.08	13	7.2	2.8	.22	1.6	.00	.09
3	.06	.23	.80	.26	.08	14	7.3	1.3	.26	1.1	.28	.08
4	.10	.35	.75	.25	.08	13	6.6	1.2	.32	.74	.03	.10
5	.13	.44	.68	.24	.08	11	6.1	1.3	.20	.30	.00	.12
6	.13	.44	.64	.23	.08	10	5.3	1.2	.21	.10	.00	.17
7	.10	.39	.62	.20	.07	8.7	4.7	1.1	.21	.07	.00	.20
8	.10	.31	.60	.15	.07	7.6	4.9	.82	.21	.05	.00	.14
9	.09	.23	.59	.11	.06	7.0	4.6	.40	.20	.02	.00	.13
10	.01	.23	.58	.08	.05	6.0	4.3	.35	.16	.07	.00	.11
11	.00	.27	.59	.06	.04	5.5	4.7	.49	.15	.09	.00	.06
12	.06	.31	.60	.07	.04	5.0	4.4	.32	.19	.17	.00	.05
13	.15	.27	.63	.09	.06	4.5	3.9	.20	.32	.14	.00	.06
14	.10	.27	.66	.10	.09	3.6	3.7	.16	5.9	.02	.00	.10
15	.15	.31	.66	.10	.18	3.0	4.3	.15	78	.03	.00	.16
16	.44	.44	.69	.09	.58	2.4	3.5	.15	46	.11	.00	.14
17	.39	.58	.68	.08	1.4	1.3	3.0	.18	24	.24	.00	.11
18	.15	.58	.66	.08	3.5	1.1	4.0	.14	16	.16	.02	.13
19	.15	.69	.60	.09	9.5	1.1	5.3	.11	13	.22	.03	.21
20	.15	.69	.54	.09	20	1.6	4.1	.14	11	.23	.02	.22
21	.15	.69	.46	.09	23	2.1	4.7	.20	9.8	.22	.06	.14
22	.19	.80	.41	.11	22	1.7	4.3	.21	11	.29	.10	.18
23	.19	.95	.37	.16	20	1.6	4.5	.18	9.2	.16	.11	.19
24	.15	.95	.36	.20	18	1.3	4.6	.14	8.0	.09	.13	.20
25	.15	.95	.35	.17	16	1.0	4.0	.12	7.6	.00	.13	.16
26	.19	1.1	.36	.14	14	.93	3.8	.17	6.1	.00	.12	.10
27	.23	.95	.37	.13	13	1.4	4.5	.20	4.9	.01	.11	.00
28	.23	.95	.39	.11	12	1.5	3.9	.20	4.0	.01	.06	.03
29	.23	.80	.42	.10	---	2.9	3.2	.20	3.9	.00	.03	.06
30	.23	.95	.41	.09	---	4.5	3.0	.24	3.2	.00	.06	.07
31	.19	---	.38	.08	---	6.1	---	.24	---	.00	.06	---
TOTAL	4.72	16.59	17.69	4.37	174.12	157.83	139.7	17.81	264.47	8.54	1.35	3.54
MEAN	.15	.55	.57	.14	6.22	5.09	4.66	.57	8.82	.28	.044	.12
MAX	.44	1.1	.95	.33	23	14	7.3	3.2	78	2.3	.28	.22
MIN	.00	.23	.35	.06	.04	.93	3.0	.11	.15	.00	.00	.00
AC-FT	9.4	33	35	8.7	345	313	277	35	525	17	2.7	7.0

CAL YR 1980 TOTAL 4213.97 MEAN 11.5 MAX 300 MIN .00 AC-FT 8360
WTR YR 1981 TOTAL 810.73 MEAN 2.22 MAX 78 MIN .00 AC-FT 1610

06479515 WILLOW CREEK NEAR WATERTOWN, SD

LOCATION.--Lat 44°54'17", long 97°03'31", in NE¼NW¼ sec.34, T.117 N., R.52 W., Codington County, Hydrologic Unit 10170202, on right bank 5 ft (2 m) downstream from bridge, 4.7 mi (7.6 km) upstream from mouth, and 2.8 mi (4.5 km) east of Watertown.

DRAINAGE AREA.--125 mi^2 (324 km^2), approximately.

PERIOD OF RECORD.--September 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,721.24 ft (524.634 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--10 years, 13.2 ft^3/s (0.374 m^3/s), 9,560 acre-ft/yr (11.8 hm^3/yr); median of yearly mean discharges, 6.5 ft^3/s (0.18 m^3/s), 4,700 acre-ft/yr (5.8 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,930 ft^3/s (83.0 m^3/s) Mar. 31, 1978, gage height, 7.02 ft (2.140 m); maximum gage height, 9.86 ft (3.005 m) Mar. 15, 1972 (backwater from ice); no flow for many days each year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 9.5 ft^3/s (0.27 m^3/s) at 2345 hours, Apr. 10, gage height, 3.99 ft (1.216 m), no peak above base of 200 ft^3/s (5.66 m^3/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.29	.50	.72	.33	.08	4.0	1.6	1.9	.00	.00	1.9	.11
2	.13	.50	.68	.31	.08	4.1	1.6	1.8	.00	.00	2.3	.05
3	.12	.47	.64	.30	.08	4.1	2.4	1.7	.00	.00	2.6	.01
4	.27	.48	.61	.29	.07	3.5	2.1	1.6	.00	.00	2.7	.00
5	.37	.50	.58	.27	.07	3.0	2.0	1.5	.00	.00	2.3	.00
6	.40	.52	.56	.25	.07	2.5	1.9	1.3	.00	.00	2.2	.00
7	.41	.56	.54	.24	.07	2.0	1.8	1.3	.00	.00	2.4	.95
8	.34	.55	.52	.23	.07	1.7	2.1	1.4	.00	.00	2.4	.78
9	.29	.54	.50	.22	.06	1.2	1.9	1.1	.00	.00	2.1	.58
10	.11	.56	.50	.21	.05	1.0	2.5	1.2	.00	.00	1.5	.90
11	.01	.58	.49	.20	.04	.90	4.0	.90	.00	.22	1.1	.54
12	.10	.58	.49	.18	.03	.85	1.9	.77	.00	.56	.70	.70
13	.22	.55	.50	.20	.07	.91	2.4	.72	.54	.49	.45	.74
14	.26	.58	.52	.20	.10	1.0	2.7	.78	.90	.33	.29	.46
15	.30	.58	.52	.20	.28	1.1	2.3	.65	.65	.13	.18	.22
16	.54	.58	.51	.19	.80	1.0	1.7	.52	.85	.06	.10	.22
17	.49	.60	.49	.18	1.7	.79	1.2	.36	.92	.08	.06	.11
18	.46	.62	.43	.16	5.0	.60	2.9	.29	.77	.06	.02	.11
19	.44	.66	.38	.14	6.8	.46	3.3	.18	.71	.14	.00	.14
20	.46	.66	.34	.15	6.3	.42	3.1	.10	.74	.68	.00	.11
21	.46	.68	.32	.18	5.8	.46	3.8	.00	.66	.74	.00	.11
22	.51	.69	.31	.20	5.3	.46	3.1	.00	.66	.98	.00	.02
23	.52	.73	.30	.21	4.8	.50	2.5	.00	.62	1.7	.00	.05
24	.45	.83	.30	.22	4.1	.54	2.6	.00	.48	1.5	.00	.05
25	.45	.85	.30	.20	3.6	.54	2.5	.01	.27	1.4	.18	.05
26	.44	.87	.31	.18	3.4	.66	2.3	.04	.29	1.3	.42	.05
27	.46	.81	.32	.16	3.3	.73	2.7	.05	.21	1.2	.70	.05
28	.46	.76	.34	.13	3.6	1.1	2.4	.35	.01	1.1	.66	.05
29	.46	.70	.35	.11	---	1.4	2.0	.27	.00	1.2	.54	.06
30	.50	.75	.36	.10	---	1.6	1.8	.05	.00	1.4	.42	.07
31	.50	---	.35	.09	---	2.1	---	.00	---	1.6	.26	---
TOTAL	11.22	18.84	14.08	6.23	55.72	45.22	71.1	20.84	9.28	16.87	28.48	7.29
MEAN	.36	.63	.45	.20	1.99	1.46	2.37	.67	.31	.54	.92	.24
MAX	.54	.87	.72	.33	6.8	4.1	4.0	1.9	.92	1.7	2.7	.95
MIN	.01	.47	.30	.09	.03	.42	1.2	.00	.00	.00	.00	.00
AC-FT	22	37	28	12	111	90	141	41	18	33	56	14

CAL YR 1980 TOTAL 1832.74 MEAN 5.01 MAX 332 MIN .01 AC-FT 3640
WTR YR 1981 TOTAL 305.17 MEAN .84 MAX 6.8 MIN .00 AC-FT 605

06479525 BIG SIOUX RIVER NEAR CASTLEWOOD, SD

LOCATION.--Lat 44°43'54", long 97°02'39", in SW¼SW¼ sec.26, T.115 N., R.52 W., Hamlin County, Hydrologic Unit 10170202, on right bank at upstream side of highway bridge on State Highway 22, 3.25 mi (5.2 km) east of intersection of U.S. Highway 81 and State Highway 22, and 1.0 mi (1.6 km) northwest of Castlewood.

DRAINAGE AREA.--1,592 mi² (4,123 km²), approximately.

PERIOD OF RECORD.--October 1976 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,667.52 ft (508.260 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--5 years, 52.3 ft³/s (1.481 m³/s) 37,890 acre-ft/yr (46.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 1,740 ft³/s (49.3 m³/s) Mar. 31, 1978, gage height, 11.10 ft (3.383 m); maximum gage height, 11.24 ft (3.426 m) Apr. 13, 1979; no flow for many days in most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 368 ft³/s (10.4 m³/s) at 2145 hours, July 22, gage height, 7.60 ft (2.316 m), no peak above base of 450 ft³/s (12.7 m³/s); minimum daily discharge, 1.2 ft³/s (0.034 m³/s) Feb. 11.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	6.7	7.6	12	3.9	1.5	50	29	8.6	3.7	4.8	10	4.4
2	6.7	7.6	11	3.4	1.5	53	26	8.0	3.7	4.1	11	4.3
3	6.3	8.0	10	3.2	1.5	56	25	8.4	4.5	5.1	10	3.5
4	6.3	8.0	9.4	3.0	1.5	50	25	8.2	4.4	5.4	11	2.8
5	6.3	6.4	8.7	2.8	1.4	43	24	8.0	4.7	6.1	9.6	2.2
6	6.0	7.1	8.2	2.7	1.4	36	22	7.6	4.1	5.1	8.1	3.8
7	6.1	7.8	7.7	2.5	1.4	32	21	7.3	4.4	3.5	6.9	8.3
8	6.0	8.2	7.5	2.2	1.4	28	20	6.9	4.8	4.0	6.4	9.4
9	6.0	8.3	7.3	2.0	1.4	25	19	6.6	5.9	4.0	6.2	5.8
10	6.0	7.8	7.2	1.7	1.3	23	19	6.3	6.3	3.8	6.1	5.1
11	5.7	8.3	7.2	1.6	1.2	22	18	5.8	6.0	5.9	5.9	4.1
12	5.7	8.4	7.3	1.5	1.3	25	18	5.3	5.7	15	5.8	4.6
13	5.4	9.5	7.7	1.6	1.4	28	18	4.9	5.6	10	5.8	4.3
14	5.8	13	8.1	1.6	2.0	31	17	4.7	15	7.5	5.5	4.7
15	6.3	12	8.4	1.6	4.8	33	16	4.4	98	6.8	5.2	5.4
16	10	15	8.7	1.5	14	31	16	4.2	57	6.6	5.0	4.9
17	14	11	8.3	1.5	45	27	16	4.2	30	6.6	4.8	5.4
18	10	13	7.8	1.5	76	24	15	4.1	20	5.7	4.6	6.1
19	8.4	14	7.1	1.5	90	21	16	4.1	14	5.8	4.4	5.8
20	8.2	12	6.5	1.5	84	18	15	4.0	10	7.3	4.7	5.7
21	7.9	13	5.6	1.6	80	12	14	3.2	9.0	37	5.0	5.3
22	7.8	13	4.9	1.7	72	11	16	1.8	11	74	4.7	6.2
23	8.0	11	4.6	1.9	66	11	15	2.9	8.8	63	4.9	5.9
24	8.5	14	4.4	2.1	61	11	12	3.7	7.1	45	5.3	5.6
25	8.0	13	4.2	1.9	55	12	11	4.2	6.0	26	5.9	6.0
26	8.9	13	4.3	1.8	51	12	11	4.9	5.4	19	4.2	4.8
27	8.0	11	4.5	1.7	48	12	11	4.6	5.0	14	4.8	4.2
28	8.9	12	4.8	1.7	48	16	10	5.9	5.5	12	5.5	5.0
29	8.0	10	5.1	1.6	---	25	9.7	5.9	5.7	10	5.0	3.6
30	7.9	12	5.0	1.5	---	30	9.4	4.7	5.2	9.7	4.8	3.6
31	7.8	---	4.6	1.5	---	27	---	3.9	---	9.3	4.5	---
TOTAL	231.6	315.0	218.1	61.8	815.0	835	514.1	167.3	376.5	442.1	191.6	150.8
MEAN	7.47	10.5	7.04	1.99	29.1	26.9	17.1	5.40	12.6	14.3	6.18	5.03
MAX	14	15	12	3.9	90	56	29	8.6	98	74	11	9.4
MIN	5.4	6.4	4.2	1.5	1.2	11	9.4	1.8	3.7	3.5	4.2	2.2
AC-FT	459	625	433	123	1620	1660	1020	332	747	877	380	299

CAL YR 1980 TOTAL 10668.3 MEAN 29.1 MAX 419 MIN 4.2 AC-FT 21160
WTR YR 1981 TOTAL 4318.9 MEAN 11.8 MAX 98 MIN 1.2 AC-FT 8570

06479529 STRAY HORSE CREEK NEAR CASTLEWOOD, SD

LOCATION.--Lat 44°43'52", long 96°57'23", in NE¼NE¼NW¼ sec.33, T.115 N., R.51 W., Hamlin County, Hydrologic Unit 10170202, on right bank at downstream side of bridge on State Highway 22, 3.5 mi (5.6 km) east of Castlewood, 6.4 mi (10.3 km) upstream from mouth, and 7.0 mi (11.3 km) north of Dempster.

DRAINAGE AREA.--73.7 mi² (191 km²), approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,703.88 ft (519.343 m) National Geodetic Vertical Datum of 1929 (South Dakota Department of Transportation bench mark).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--13 years, 11.2 ft³/s (0.317 m³/s), 8,110 acre-ft/yr (10.0 hm³/yr); median of yearly mean discharges, 7.5 ft³/s (0.21 m³/s), 5,400 acre-ft/yr (6.7 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 14,000 ft³/s (396 m³/s) Apr. 7, 1969, gage height, 14.65 ft (4.465 m), from rating curve extended above 3,500 ft³/s (99.1 m³/s) on basis of contracted-opening measurement of peak flow; no flow for many days most years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 618 ft³/s (17.5 m³/s) at 1815 hours, July 22, gage height, 8.48 ft (2.585 m), no other peak above base of 175 ft³/s (4.96 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.30	.00	.01	.00	.07	.10	1.7	.70	.00	.15	.35	.14
2	.07	.00	.10	.00	.06	.08	1.7	.72	.00	.05	.41	.03
3	.07	.04	.05	.00	.06	.10	1.6	.60	.00	.21	.34	.02
4	.10	.14	.60	.00	.06	.15	1.6	.66	.00	.29	.43	.05
5	.07	.19	.56	.00	.06	.17	1.6	.65	.00	.24	.38	.00
6	.18	.22	.26	.00	.05	.18	1.6	.63	.00	.15	.32	.13
7	.21	.24	.25	.00	.05	.16	1.3	.60	.00	.04	.29	.34
8	.21	.21	.03	.00	.05	.15	1.3	.52	.00	.00	.25	.21
9	.21	.12	.00	.00	.04	.13	1.2	.36	.00	.00	.23	.11
10	.14	.09	.00	.00	.03	.11	1.1	.27	.00	.00	.21	.00
11	.10	.04	.00	.00	.01	.10	.97	.27	.00	.00	.20	.04
12	.07	.01	.00	.03	.00	.09	1.1	.21	.00	.00	.18	.00
13	.10	.04	.00	.07	.01	.08	1.1	.16	.18	.00	.16	.00
14	.07	.06	.02	.09	.04	.07	.94	.13	.37	.00	.15	.00
15	.18	.16	.01	.08	.10	.06	.96	.12	.29	.01	.13	.00
16	.34	.21	.00	.07	.20	.05	.93	.12	.18	.04	.11	.04
17	.49	.22	.03	.07	.30	.06	.77	.07	.06	.03	.10	.04
18	.29	.14	.04	.06	.45	.08	.71	.07	.16	.00	.08	.00
19	.32	.22	.02	.07	.52	.10	.89	.03	.03	.00	.07	.01
20	.32	.22	.00	.07	.50	.18	.85	.00	.03	.00	.12	.02
21	.27	.28	.00	.08	.45	.13	.98	.00	.13	19	.10	.00
22	.28	.54	.00	.10	.42	.16	1.3	.00	.25	82	.06	.03
23	.17	.39	.00	.14	.35	.15	2.1	.00	.38	32	.16	.01
24	.16	.13	.00	.17	.28	.15	2.1	.00	.32	11	.18	.01
25	.18	.12	.00	.14	.24	.24	1.9	.11	.20	4.5	.17	.02
26	.09	.00	.00	.12	.21	.17	1.8	.12	.11	2.8	.16	.02
27	.06	.04	.00	.10	.17	.20	1.7	.05	.18	1.2	.18	.01
28	.02	.10	.00	.09	.14	.37	1.5	.06	.37	.60	.29	.00
29	.01	.11	.00	.08	---	.79	1.3	.10	.21	.55	.26	.12
30	.06	.08	.00	.07	---	.91	.91	.10	.00	.40	.22	.16
31	.00	---	.00	.07	---	1.3	---	.03	---	.33	.15	---
TOTAL	5.14	4.36	1.98	1.77	4.92	6.77	39.51	7.46	3.45	155.79	6.49	1.56
MEAN	.17	.15	.064	.057	.18	.22	1.32	.24	.12	5.03	.21	.052
MAX	.49	.54	.60	.17	.52	1.3	2.1	.72	.38	82	.43	.34
MIN	.00	.00	.00	.00	.00	.05	.71	.00	.00	.00	.06	.00
AC-FT	10	8.6	3.9	3.5	9.8	13	78	15	6.8	309	13	3.1

CAL YR 1980 TOTAL 6533.91 MEAN 17.9 MAX 632 MIN .00 AC-FT 12960
WTR YR 1981 TOTAL 239.20 MEAN .66 MAX 82 MIN .00 AC-FT 474

06479640 HIDEWOOD CREEK NEAR ESTELLINE, SD

LOCATION.--Lat 44°36'42", long 96°54'17", in SW¼NW¼ sec.12, T.113 N., R.51 W., Hamlin County, Hydrologic Unit 10170202, on left bank at upstream side of highway bridge, 2.7 mi (4.3 km) north of Estelline, 2.8 mi (4.5 km) southeast of Dempster, and 4.7 mi (7.6 km) upstream from mouth.

DRAINAGE AREA.--164 mi² (425 km²), approximately.

PERIOD OF RECORD.--October 1968 to current year.

GAGE.--Water-stage recorder. Altitude of gage is 1,665 ft (507 m).

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--13 years, 23.6 ft³/s (0.668 m³/s), 17,100 acre-ft/yr (21.1 hm³/yr); median of yearly mean discharges, 18 ft³/s (0.51 m³/s), 13,000 acre-ft/yr (16 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 3,630 ft³/s (103 m³/s) Apr. 7, 1969, gage height, 11.36 ft (3.463 m); maximum gage height, 11.55 ft (3.520 m) Apr. 8, 1969 (backwater from collapsed bridge), no flow at times in 1969, 1971, 1974-77, 1981.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 78 ft³/s (2.21 m³/s) at 2120 hours, July 22, gage height, 3.66 ft (1.116 m), no peak above base of 300 ft³/s (8.50 m³/s); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Dec. 20 to Feb. 20)

2.08	0	2.4	4.1
2.1	.04	2.6	9.5
2.2	.69	2.9	22
2.3	2.2	3.1	34

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	.01	.24	.59	.24	.31	21	7.3	1.0	.00	.00	.72	.00
2	.01	.28	.49	.23	.28	16	7.6	.31	.00	.00	.99	.00
3	.00	.55	.27	.22	.25	13	7.7	.62	.00	.00	.67	.00
4	.02	.50	.27	.22	.23	11	7.5	.71	.00	.00	.35	.00
5	.08	.44	.41	.21	.21	9.6	6.4	.72	.00	.00	.26	.00
6	.12	.52	.59	.22	.20	8.7	4.9	.57	.00	.00	.06	.00
7	.09	.41	.59	.22	.20	8.1	4.7	.50	.00	.00	.00	.00
8	.11	.59	.49	.19	.16	6.8	4.1	.46	.00	.00	.00	.00
9	.13	.49	.41	.19	.10	6.1	3.4	.44	.00	.00	.00	.00
10	.14	.34	.41	.20	.06	6.0	3.0	.30	.06	.00	.00	.00
11	.17	.41	.34	.22	.04	5.0	3.0	.94	.18	.00	.00	.00
12	.15	.69	.22	.25	.18	3.6	2.7	1.1	.22	.00	.00	.00
13	.11	.81	.27	.24	.70	2.9	2.8	1.5	.30	.00	.00	.00
14	.12	.69	.17	.22	1.7	2.5	2.3	1.1	.37	.00	.00	.00
15	.17	.69	.17	.20	2.5	2.4	1.9	.72	.34	.00	.00	.00
16	.53	.69	.22	.18	3.2	1.5	1.6	.58	.26	.00	.00	.00
17	.58	.69	.22	.16	4.8	1.1	1.9	.51	.18	.00	.00	.00
18	.55	.69	.21	.14	6.1	.95	1.4	.69	.10	.00	.00	.00
19	1.0	.69	.21	.16	10	.82	1.2	.31	.06	.00	.00	.00
20	.81	.81	.20	.18	20	.66	.84	.10	.03	.00	.00	.00
21	.56	.81	.19	.22	29	.41	.99	.00	.01	.02	.00	.00
22	.50	.81	.18	.23	21	.62	1.4	.00	.00	11	.00	.00
23	.49	1.5	.16	.25	15	1.5	2.3	.03	.00	29	.00	.00
24	.41	1.4	.15	.28	16	1.6	2.0	.35	.00	6.6	.00	.00
25	.42	.93	.14	.30	14	1.2	2.0	.11	.00	3.4	.00	.00
26	.27	.69	.15	.31	11	.94	2.2	.00	.00	1.9	.00	.00
27	.29	.69	.16	.31	14	.81	2.4	.00	.00	1.5	.00	.00
28	.27	.69	.20	.32	19	1.5	2.4	.00	.00	1.1	.00	.00
29	.27	.69	.23	.32	---	2.5	2.0	.00	.00	.51	.00	.00
30	.28	.59	.25	.33	---	3.2	1.7	.00	.00	.37	.00	.00
31	.31	---	.26	.33	---	6.2	---	.00	---	.32	.00	---
TOTAL	8.97	20.02	8.82	7.29	190.22	148.21	95.63	13.67	2.11	55.72	3.05	.00
MEAN	.29	.67	.28	.24	6.79	4.78	3.19	.44	.070	1.80	.098	.000
MAX	1.0	1.5	.59	.33	29	21	7.7	1.5	.37	29	.99	.00
MIN	.00	.24	.14	.14	.04	.41	.84	.00	.00	.00	.00	.00
AC-FT	18	40	17	14	377	294	190	27	4.2	111	6.0	.00

CAL YR 1980 TOTAL 5642.08 MEAN 15.4 MAX 1340 MIN .00 AC-FT 11190
WTR YR 1981 TOTAL 553.71 MEAN 1.52 MAX 29 MIN .00 AC-FT 1100

06479980 MEDARY CREEK NEAR BROOKINGS, SD

LOCATION.--Lat 44°13'27", long 96°46'06", in NE¼NE¼NE¼ sec.25, T.109 N., R.50 W., Brookings County, Hydrologic Unit 10170202, on right bank 400 ft (122 m) downstream from county highway bridge, 5.2 mi (8.4 km) downstream from Deer Creek, 4.1 mi (6.6 km) upstream from mouth, and 6.1 mi (9.8 km) southeast of Brookings.

DRAINAGE AREA.--232 mi^2 (601 km^2).

PERIOD OF RECORD.--October 1979 to September 1980.

GAGE.--Water-stage recorder. Datum of gage is 1,570.20 ft (478.597 m) National Geodetic Vertical Datum of 1929.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 38 ft^3/s (1.08 m^3/s) at 1230 hours, Mar. 3, gage height, 3.73 ft (1.137 m); no flow for many days.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Oct. 1 to Feb. 3, Sept. 27-30)

2.97	0	3.20	3.0	3.5	14
3.00	0.30	3.30	5.1	3.6	24
3.10	1.5	3.40	8.5	3.7	38

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	2.3	2.7	1.7	1.1	2.0	7.3	16	5.3	1.2	.00	1.6	1.0
2	2.2	2.7	1.3	1.1	1.5	7.7	19	7.6	1.5	.00	1.5	.90
3	2.3	2.6	1.5	1.0	1.4	19	20	7.2	1.4	.08	1.5	.90
4	2.5	2.6	1.9	.97	1.2	13	20	6.6	1.2	.17	1.5	.66
5	2.7	2.7	2.2	.96	1.1	11	19	5.6	1.1	.00	1.3	.66
6	2.9	2.7	2.1	.94	.98	7.7	17	5.0	.87	.00	1.1	.78
7	2.8	2.5	1.9	.91	1.0	6.2	16	4.4	.93	.00	.89	1.0
8	2.8	2.5	1.7	.89	1.1	5.6	14	4.0	.68	.00	.85	.54
9	2.7	2.6	1.5	.88	.72	5.8	14	3.5	.62	.00	.88	.42
10	2.6	2.5	1.3	.94	.68	4.8	13	3.2	.96	.00	.74	.30
11	2.6	2.5	1.4	1.1	.40	4.5	13	3.0	1.1	.00	.54	.10
12	2.8	2.3	1.6	1.2	.00	4.6	13	2.8	1.3	.00	.54	.00
13	3.0	2.5	1.7	1.1	.68	4.2	22	2.6	1.8	.00	.42	.00
14	3.3	2.5	1.8	1.0	1.9	3.7	28	2.5	2.2	.14	2.2	.00
15	3.4	2.6	1.9	.73	2.4	3.8	27	2.3	2.0	.14	1.5	.00
16	4.0	2.7	2.0	.71	2.5	3.6	24	2.2	1.9	.00	.96	.10
17	3.8	2.5	1.9	.66	4.7	3.4	21	2.1	1.9	.00	.78	.10
18	3.2	2.5	1.4	.64	6.0	3.1	17	2.0	1.5	.00	.77	.10
19	3.0	2.8	1.0	.68	7.1	3.2	17	1.8	1.3	.00	.65	.00
20	2.9	2.8	.90	.77	6.2	3.6	15	1.7	1.3	.67	.54	.00
21	2.7	2.6	.95	.93	15	3.5	14	1.6	1.3	1.6	.42	.00
22	2.8	2.8	.98	1.0	7.4	3.2	15	1.7	1.3	4.2	.53	.00
23	2.8	2.8	.85	1.1	6.1	3.1	15	1.6	1.0	7.9	.90	.00
24	2.7	2.8	.80	1.4	5.1	3.3	15	1.6	1.1	2.9	1.4	.00
25	2.6	2.7	.76	1.4	4.6	3.5	15	1.7	.70	2.2	1.8	.10
26	2.7	2.6	.82	1.5	4.7	3.5	13	1.7	.31	1.8	1.5	.42
27	2.7	2.6	.80	1.5	7.9	3.6	11	1.8	.40	1.5	1.3	.20
28	4.1	2.7	1.0	1.5	7.6	4.0	9.5	1.8	.40	1.5	1.1	.10
29	3.3	2.4	1.1	1.4	---	10	9.3	2.0	.38	1.4	1.1	.10
30	2.8	2.8	1.2	1.7	---	14	6.0	1.6	.00	1.4	1.1	.10
31	2.7	---	1.2	1.7	---	15	---	1.2	---	1.4	1.1	---
TOTAL	89.7	78.6	43.16	33.41	101.96	192.5	489.8	93.7	33.65	29.00	33.01	8.58
MEAN	2.89	2.62	1.39	1.08	3.64	6.21	16.3	3.02	1.12	.94	1.06	.29
MAX	4.1	2.8	2.2	1.7	15	19	28	7.6	2.2	7.9	2.2	1.0
MIN	2.2	2.3	.76	.64	.00	3.1	6.0	1.2	.00	.00	.42	.00
AC-FT	178	156	86	66	202	382	972	186	67	58	65	17

WTR YR 1981 TOTAL 1227.07 MEAN 3.36 MAX 28 MIN .00 AC-FT 2430

06480000 BIG SIOUX RIVER NEAR BROOKINGS, SD

LOCATION.--Lat 44°10'48", long 96°44'55", in NW¼NW¼ sec.8, T.108 N., R.49 W., Moody County, Hydrologic Unit 10170203, on right bank 3 ft (1 m) downstream from highway bridge, 2.2 mi (3.5 km) downstream from Medary Creek and 9.5 mi (15.3 km) southeast of Brookings.

DRAINAGE AREA.--4,420 mi² (11,450 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

PERIOD OF RECORD.--August 1953 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,551.91 ft (473.022 m) National Geodetic Vertical Datum of 1929. Prior to May 30, 1959, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--28 years, 159 ft³/s (4.503 m³/s), 115,200 acre-ft/yr (142 hm³/yr); median of yearly mean discharges, 110 ft³/s (3.12 m³/s), 79,700 acre-ft/yr (98 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 33,900 ft³/s (960 m³/s) Apr. 9, 1969, gage height, 14.77 ft (4.502 m); no flow at times in 1956, 1959, 1976, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 143 ft³/s (4.05 m³/s) at 0230 hours, July 26, gage height, 3.01 ft (0.917 m), no peak above base of 1,000 ft³/s (28.3 m³/s); minimum daily discharge, 3.6 ft³/s (0.10 m³/s) Sept. 23.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Stage-discharge relation affected by ice Nov. 17 to Mar. 13)

1.6	3	2.5	86
1.7	7	3.0	145
2.0	35		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	24	27	14	7.2	6.4	15	72	48	19	15	40	10
2	21	25	14	7.3	6.4	16	80	47	22	14	36	9.8
3	20	25	14	7.4	6.4	16	81	51	21	17	37	8.0
4	20	25	14	7.2	6.4	16	84	51	20	16	38	7.8
5	20	25	14	7.0	6.4	19	86	48	16	14	36	7.2
6	20	25	13	6.7	6.4	22	82	46	16	12	34	6.9
7	20	26	13	6.4	6.5	23	80	44	16	11	31	7.9
8	20	26	13	6.3	6.4	25	78	43	17	9.4	29	7.1
9	21	25	13	6.3	6.4	29	74	41	17	10	28	7.3
10	21	23	13	6.3	6.4	33	71	42	18	9.4	26	7.1
11	20	24	13	6.3	6.4	36	74	39	19	8.1	24	6.4
12	18	24	13	6.3	6.5	39	75	36	17	7.7	23	5.7
13	19	24	12	6.3	6.5	42	78	36	19	9.5	21	5.9
14	18	24	12	6.2	6.6	45	85	36	23	8.0	27	5.7
15	19	21	11	6.2	6.7	46	83	35	26	7.3	38	5.9
16	26	20	11	6.2	6.7	43	80	33	26	7.5	29	6.1
17	30	19	11	6.3	6.8	43	76	31	24	7.9	24	6.3
18	30	19	11	6.5	7.0	42	70	30	32	7.7	22	5.8
19	28	19	11	6.6	7.5	39	69	29	30	6.9	19	5.6
20	28	19	10	6.5	7.9	40	66	26	25	7.8	17	6.3
21	28	18	9.8	6.4	8.5	39	63	23	25	8.6	16	4.8
22	28	18	9.6	6.4	8.9	40	66	22	24	18	15	4.1
23	27	18	9.3	6.2	9.5	39	69	21	22	33	16	3.6
24	27	17	8.9	6.2	10	39	67	21	21	55	17	4.0
25	28	17	8.5	6.3	11	40	66	21	19	108	21	4.1
26	25	17	8.3	6.3	12	39	64	21	17	128	18	7.4
27	26	16	8.0	6.3	13	39	61	21	17	91	16	4.5
28	27	16	7.7	6.4	14	40	56	21	17	69	16	4.2
29	27	15	7.6	6.4	---	57	55	21	17	56	15	3.9
30	27	15	7.4	6.4	---	67	52	20	16	47	13	4.2
31	26	---	7.2	6.4	---	68	---	19	---	42	11	---
TOTAL	739	632	342.3	201.2	219.6	1136	2163	1023	620	861.8	755	183.6
MEAN	23.8	21.1	11.0	6.49	7.84	36.6	72.1	33.0	20.7	27.8	24.4	6.12
MAX	30	27	14	7.4	14	68	86	51	32	128	40	10
MIN	18	15	7.2	6.2	6.4	15	52	19	16	6.9	11	3.6
AC-FT	1470	1250	679	399	436	2250	4290	2030	1230	1710	1500	364

CAL YR 1980 TOTAL 44642.3 MEAN 122 MAX 3300 MIN 7.2 AC-FT 88550
WTR YR 1981 TOTAL 8876.5 MEAN 24.3 MAX 128 MIN 3.6 AC-FT 17610

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD

LOCATION.--Lat 43°47'25", long 96°44'42", in NW¼NW¼ sec.29, T.104 N., R.49 W., Minnehaha County, Hydrologic Unit 10170203, on left bank at downstream side of highway bridge, 0.2 mi (0.3 km) downstream from confluence of divided channels and 3.0 mi (4.8 km) southwest of Dell Rapids.

DRAINAGE AREA.--5,060 mi^2 (13,100 km^2), approximately, of which about 1,970 mi^2 (5,100 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--May 1948 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,455.99 ft (443.786 m) National Geodetic Vertical Datum of 1929. Prior to Nov. 11, 1949, nonrecording gage and Nov. 11, 1949, to Sept. 30, 1951, water-stage recorder, at present site at datum 0.04 ft (0.012 m) lower.

REMARKS.--Records good except those for winter periods, which are fair. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--33 years, 252 ft^3/s (7.137 m^3/s), 182,600 acre-ft/yr (225 hm^3/yr); median of yearly mean discharges, 190 ft^3/s (5.38 m^3/s), 138,000 acre-ft/yr (170 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 41,300 ft^3/s (1,170 m^3/s) Apr. 9, 1969, gage height, 16.47 ft (5.020 m); no flow Aug. 25 to Oct. 17, 1976.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 125 ft^3/s (3.54 m^3/s) at 1415 hours, Apr. 6, gage height, 3.66 ft (1.116 m), no peak above base of 1,000 ft^3/s (28.3 m^3/s); minimum daily discharge, 13 ft^3/s (0.37 m^3/s) Sept. 16, 17.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	36	40	30	19	17	36	88	64	30	29	62	46
2	35	43	26	19	17	32	105	74	28	30	51	44
3	37	40	26	19	17	41	90	65	26	36	43	40
4	36	41	27	18	17	50	97	61	27	37	53	40
5	37	42	27	18	17	43	98	59	27	35	50	38
6	36	42	27	17	17	48	105	60	27	31	48	35
7	35	40	27	17	17	50	100	59	28	30	46	28
8	36	40	26	17	17	55	99	54	27	31	47	25
9	38	39	27	17	17	63	97	49	28	30	46	29
10	32	40	26	17	17	59	89	48	28	30	46	29
11	32	39	25	17	17	57	86	47	29	28	44	29
12	33	38	25	17	17	59	85	47	31	28	44	27
13	34	35	24	17	17	61	78	44	33	28	42	20
14	32	35	25	16	17	64	77	42	32	25	37	18
15	33	35	24	16	18	59	88	42	29	24	37	14
16	38	35	24	16	18	61	93	42	27	26	42	13
17	36	34	24	16	19	59	88	41	29	24	46	13
18	38	33	23	17	19	58	94	38	27	23	41	15
19	37	33	22	17	18	57	90	36	29	22	41	22
20	37	32	20	17	19	58	89	37	29	22	43	20
21	37	33	20	16	20	56	84	34	31	24	42	18
22	38	35	20	17	21	55	75	28	34	23	39	18
23	37	34	20	17	22	56	70	27	33	23	47	18
24	34	33	19	17	25	55	75	26	33	27	49	18
25	35	32	19	17	29	55	79	27	33	41	46	17
26	36	32	18	17	29	53	83	28	31	50	54	20
27	37	33	18	17	33	61	81	28	30	49	46	18
28	37	30	18	17	36	60	77	28	30	75	47	18
29	39	31	18	17	---	70	68	28	31	97	50	18
30	38	31	18	17	---	70	65	29	31	87	49	18
31	38	---	18	17	---	75	---	29	---	69	48	---
TOTAL	1114	1080	711	530	564	1736	2593	1321	888	1134	1428	726
MEAN	35.9	36.0	22.9	17.1	20.1	56.0	86.4	42.6	29.6	36.6	46.1	24.2
MAX	39	43	30	19	36	75	105	74	34	97	62	46
MIN	32	30	18	16	17	32	65	26	26	22	37	13
AC-FT	2210	2140	1410	1050	1120	3440	5140	2620	1760	2250	2830	1440

CAL YR 1980 TOTAL 56045 MEAN 153 MAX 2150 MIN 18 AC-FT 111200
WTR YR 1981 TOTAL 13825 MEAN 37.9 MAX 105 MIN 13 AC-FT 27420

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1960-62, 1968 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1967 to September 1970, October 1973 to September 1980.
WATER TEMPERATURES: October 1967 to September 1971, October 1974 to September 1975, October 1979 to September 1980.
SUSPENDED SEDIMENT DISCHARGE: October 1967 to September 1976.

REMARKS.--There are many days of no samples during the year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,100 micromhos Jan. 27, 1977; minimum daily, 140 micromhos Apr. 9, 1969.
WATER TEMPERATURES: Maximum daily, 33.5°C July 7, 12, 16, 20, 1974; minimum daily, 0.0°C on many days during winter periods.
SEDIMENT CONCENTRATIONS: Maximum daily mean, 619 mg/L Apr. 19, 1974; minimum daily mean, 0 mg/L Aug. 25 to Sept. 30, 1976.
SEDIMENT LOADS: Maximum daily, 40,600 tons (36,800 tonnes) Apr. 9, 1969; minimum daily, 0 ton (0 tonne) Aug. 8, 9, 14, Aug. 24 to Sept. 30, 1976.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	HARDNESS (MG/L AS CACO3) (00900)	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)
OCT									
16...	1600	40	790	8.8	10.5	380	220	73	47
NOV									
25...	1300	32	838	8.5	1.5	350	190	66	44
DEC									
22...	1300	20	1050	7.8	.5	480	250	94	57
JAN									
29...	1430	17	--	--	1.0	530	280	120	57
FEB									
19...	1430	19	1020	7.9	2.0	450	220	100	48
MAR									
18...	1330	55	630	8.6	4.5	300	160	65	33
APR									
30...	1100	63	970	8.2	14.5	440	220	92	52
MAY									
26...	1430	26	940	--	17.0	390	200	75	50
JUN									
19...	1300	28	710	8.4	18.5	370	180	74	46
JUL									
30...	1500	89	620	8.6	20.5	280	140	56	34
AUG									
27...	1230	44	710	8.2	19.5	290	150	62	33
SEP									
28...	1330	18	830	8.4	15.0	370	190	76	44

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD- SORP- TION RATIO (00931)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	ALKA- LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)
OCT 16...	36	17	.8	6.6	160	--	--	--	.1
NOV 25...	38	19	.9	5.0	--	210	40	.2	.1
DEC 22...	50	18	1.0	6.0	230	260	50	.3	5.2
JAN 29...	54	18	1.0	5.4	250	280	56	.3	7.2
FEB 19...	50	19	1.0	5.4	230	270	51	.3	7.2
MAR 18...	33	19	.8	4.5	140	170	31	.3	7.1
APR 30...	39	16	.8	5.0	220	260	20	.3	7.4
MAY 26...	44	19	1.0	5.8	190	250	41	.3	.2
JUN 19...	43	26	1.0	6.3	190	230	43	.3	5.9
JUL 30...	43	24	1.2	7.5	140	160	50	.3	5.1
AUG 27...	35	--	1.0	--	140	170	34	.4	5.1
SEP 28...	38	18	1.0	7.4	180	230	29	.3	7.9

DATE	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	SOLIDS, DIS- SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS- SOLVED (TONS PER DAY) (70302)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	PHOS- PHORUS, TOTAL (MG/L AS P) (00665)	PHOS- PHORUS, DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P) (00671)	PHOS- PHATE, ORTHO, DIS- SOLVED (MG/L AS PO4) (00660)
OCT 16...	--	--	--	.00	.560	.060	.000	.00
NOV 25...	501	.68	43.3	.34	.120	.100	.010	.03
DEC 22...	673	.92	36.3	1.5	.140	.030	.000	.00
JAN 29...	741	1.0	33.6	2.0	.070	.020	.030	.09
FEB 19...	681	.93	34.9	2.3	.740	.010	.000	.00
MAR 18...	428	.58	63.9	.00	.240	.020	.000	.00
APR 30...	613	.83	104	.99	.300	.070	.030	.09
MAY 26...	581	.79	43.9	.04	.330	.050	.010	.03
JUN 19...	563	.77	42.6	.04	.280	.060	.060	.18
JUL 30...	441	.60	106	.11	.310	.030	.030	.09
AUG 27...	428	.58	51.4	.47	.320	.080	.020	.06
SEP 28...	542	.74	26.3	.19	.280	.010	.010	.03

06481000 BIG SIOUX RIVER NEAR DELL RAPIDS, SD--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	800	840	---	---	---	---	650	970	900	890	670	770
2	820	820	---	1260	---	640	650	---	870	900	670	790
3	810	830	---	---	1200	630	700	---	880	830	610	780
4	820	820	---	---	---	---	690	950	910	---	570	760
5	---	820	---	1160	---	660	710	960	910	860	530	770
6	800	810	---	1210	1280	650	720	960	890	860	530	740
7	810	810	---	1200	---	620	720	950	---	900	550	740
8	820	---	---	---	---	630	740	950	910	870	570	760
9	820	780	950	---	---	640	780	930	910	870	---	750
10	---	---	970	---	---	670	800	---	910	870	---	730
11	810	790	---	---	---	660	830	930	920	870	660	740
12	810	---	1010	1320	1260	700	---	940	920	---	680	750
13	820	---	980	1320	1410	710	890	940	---	840	---	760
14	830	---	---	1320	1380	690	900	950	---	850	650	760
15	---	820	1090	1320	100	---	930	950	---	870	690	760
16	820	830	1150	1320	---	690	930	930	---	870	---	770
17	830	840	---	1320	---	690	920	---	---	870	720	790
18	---	---	800	---	---	---	920	930	---	880	730	800
19	---	850	1100	---	980	700	---	930	---	860	730	820
20	820	840	1100	1320	820	700	910	910	---	880	730	830
21	820	850	1150	---	310	720	860	920	---	880	730	850
22	820	840	1080	---	750	710	870	910	---	860	740	860
23	830	830	---	620	730	720	900	930	---	840	---	880
24	840	830	---	1220	---	680	910	---	860	840	660	---
25	850	820	---	---	800	710	920	940	860	840	660	900
26	850	840	---	---	800	720	920	940	---	---	690	790
27	860	---	1290	---	770	720	910	920	860	830	750	---
28	870	---	1560	1120	720	740	900	950	---	710	750	870
29	---	860	---	1120	---	---	890	930	870	660	740	920
30	880	860	---	1080	---	730	870	930	880	760	---	910
31	860	---	730	1080	---	---	---	930	---	720	770	---
MEAN	829	829	1070	1190	887	685	834	938	891	843	671	798

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	15.0	7.0	---	---	---	---	14.0	16.0	24.0	24.0	25.0	24.0
2	15.0	7.0	---	.0	---	2.0	16.0	---	23.0	25.0	29.0	24.0
3	17.0	10.0	---	---	.0	4.0	12.0	---	25.0	24.0	27.0	14.0
4	14.0	7.0	---	---	---	---	9.0	15.0	21.0	---	27.0	24.0
5	---	5.0	---	.0	---	4.0	14.0	18.0	25.0	29.0	30.0	24.0
6	17.0	9.0	---	.0	.0	4.0	15.0	17.0	27.0	31.0	26.0	20.0
7	17.0	10.0	---	.0	---	4.0	12.0	17.0	---	30.0	27.0	24.0
8	14.0	---	---	---	---	3.0	12.0	18.0	22.0	26.0	22.0	25.0
9	18.0	9.0	.0	---	---	4.0	12.0	17.0	20.0	25.0	---	25.0
10	---	---	.0	---	---	4.0	12.0	---	24.0	25.0	---	27.0
11	9.0	6.0	.0	---	---	5.0	12.0	18.0	22.0	25.0	25.0	25.0
12	13.0	---	2.0	2.0	.0	6.0	---	14.0	24.0	---	28.0	20.0
13	11.0	---	3.0	3.0	.0	6.0	10.0	17.0	---	28.0	---	24.0
14	9.0	---	3.0	.0	1.0	8.0	12.0	21.0	---	32.0	27.0	21.0
15	---	6.0	2.0	.0	2.0	---	11.0	18.0	---	27.0	25.0	17.0
16	9.0	5.0	2.0	.0	---	9.0	15.0	17.0	---	28.0	---	16.0
17	9.0	3.0	---	.0	---	7.0	18.0	---	---	33.0	24.0	17.0
18	---	---	.0	---	---	---	15.0	18.0	---	26.0	26.0	18.0
19	---	4.0	.0	---	4.0	6.0	---	21.0	---	30.0	21.0	25.0
20	12.0	5.0	.0	3.0	3.0	6.0	18.0	21.0	---	29.0	26.0	22.0
21	7.0	5.0	.0	---	4.0	6.0	15.0	18.0	---	28.0	25.0	20.0
22	12.0	7.0	4.0	---	3.0	6.0	13.0	18.0	---	28.0	21.0	15.0
23	9.0	5.0	---	2.0	3.0	9.0	16.0	19.0	---	29.0	---	18.0
24	7.0	4.0	---	2.0	---	9.0	18.0	---	25.0	28.0	22.0	---
25	6.0	3.0	---	---	4.0	11.0	19.0	17.0	24.0	24.0	21.0	20.0
26	8.0	4.0	---	---	2.0	11.0	21.0	20.0	26.0	---	20.0	18.0
27	6.0	---	3.0	---	1.0	8.0	23.0	22.0	23.0	20.0	20.0	---
28	5.0	---	---	.0	1.0	11.0	19.0	21.0	---	19.0	21.0	14.0
29	---	3.0	5.0	.0	---	---	18.0	22.0	29.0	28.0	21.0	15.0
30	4.0	2.0	6.0	.0	---	13.0	18.0	24.0	22.0	22.0	---	15.0
31	8.0	---	4.0	.0	---	---	---	18.0	---	22.0	21.0	---
MEAN	11.0	5.5	2.0	.5	2.0	6.5	15.0	18.5	24.0	26.5	24.5	20.5

BEST DOCUMENT AVAILABLE

06481500 SKUNK CREEK AT SIOUX FALLS, SD

LOCATION.--Lat 43°32'01", long 96°47'26", in NW¼SW¼ sec.24, T.101 N., R.50 W., Minnehaha County, Hydrologic Unit 10170203, on right bank 5 ft (2 m) downstream from bridge on Marion Road, 1.3 mi (2.1 km) upstream from mouth, 1.8 mi (2.9 km) downstream from small right-bank tributary, and 4.0 mi (6.4 km) southwest of Sioux Falls.

DRAINAGE AREA.--570 mi² (1,480 km²), approximately.

PERIOD OF RECORD.--May 1948 to September 1971 (published as "near Sioux Falls"). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,405.10 ft (428.274 m) National Geodetic Vertical Datum of 1929 (Corps of Engineers bench mark). Prior to Oct. 24, 1949, nonrecording gage, and Oct. 24, 1949, to Apr. 28, 1972, water-stage recorder, both at site 1.9 mi (3.1 km) upstream at datum 10.19 ft (3.106 m) higher.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--33 years, 44.5 ft³/s (1.260 m³/s), 32,240 acre-ft/yr (39.8 hm³/yr); median of yearly mean discharges, 25 ft³/s (0.71 m³/s), 18,100 acre-ft/yr (22 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 29,400 ft³/s (833 m³/s) June 17, 1957, gage height, 17.78 ft (5.419 m), site and datum then in use, from rating curve extended above 8,100 ft³/s (229 m³/s) on basis of slope-area measurement of peak flow; no flow at times in many years.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 43 ft³/s (1.22 m³/s) at 0230 hours, June 14, gage height, 2.87 ft (0.875 m); maximum gage height, 2.91 ft (0.887 m) Aug. 25 (backwater from debris); no peak above base of 500 ft³/s (14.2 m³/s); no flow for many days.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	2.5	1.8	1.1	.94	2.4	14	.95	.62	.52	.53	.19
2	.97	2.0	1.8	1.1	.90	2.5	12	1.1	.61	.93	.47	.28
3	.97	1.7	1.7	1.0	.86	2.5	9.9	1.6	.53	8.2	.78	.33
4	2.5	1.7	1.8	1.0	.88	2.6	9.7	1.3	.86	2.0	.85	.16
5	1.1	1.5	1.9	1.0	.87	2.7	9.2	1.7	2.1	2.2	.30	.30
6	1.2	1.6	2.0	1.0	.86	2.5	8.0	1.1	.95	1.8	.16	.18
7	1.2	1.5	2.0	1.0	.85	2.4	6.7	.60	.74	1.6	.15	.20
8	1.1	1.6	2.0	1.0	.84	2.4	6.3	.43	.58	1.3	.04	.09
9	.83	1.4	2.0	.95	.84	2.5	5.0	.44	.74	1.3	.09	.06
10	.88	1.9	1.7	.90	.84	2.6	4.4	.50	.70	.97	.00	.12
11	.78	1.7	1.3	.88	.84	2.7	4.4	.52	.52	.67	.00	.06
12	1.6	2.0	1.3	.92	.84	2.8	4.7	.60	.74	.45	.00	.06
13	1.0	1.6	1.4	.97	.87	2.7	4.9	.63	1.2	.24	.00	.16
14	1.0	3.5	1.6	1.2	.89	2.6	5.1	.86	5.5	.09	.12	.18
15	1.0	2.1	1.4	1.1	.95	2.5	9.4	1.4	1.3	.24	.00	.19
16	1.9	1.6	1.3	.95	1.0	2.2	10	.70	1.1	.12	.00	.01
17	2.5	1.3	1.4	.86	1.1	1.9	7.7	.75	.89	.42	.12	.00
18	2.9	1.5	1.6	.80	1.3	1.6	5.9	.74	.63	.37	.09	.00
19	2.5	1.5	1.4	.90	1.4	1.5	5.3	.65	.56	.37	.07	.00
20	1.9	1.7	1.1	.94	1.6	1.5	6.3	.63	.55	.52	.04	.00
21	1.7	1.6	1.1	.97	1.8	1.7	5.2	.75	.55	.41	.08	.00
22	1.7	1.9	1.0	.99	1.9	2.0	5.8	.70	.51	.30	.01	.01
23	2.0	1.9	1.0	1.0	2.0	1.8	4.2	.71	.53	.48	.03	.04
24	1.9	1.9	1.0	1.0	2.1	1.4	2.9	.69	.57	.31	.09	.00
25	1.6	1.8	1.0	1.0	2.2	1.6	4.6	.67	.43	.21	1.7	.00
26	1.5	2.0	.87	1.1	2.3	1.4	3.1	.66	.36	.24	.14	.00
27	1.8	2.0	.86	1.1	2.3	2.0	1.2	.68	.32	.78	.18	.00
28	1.6	2.0	.89	1.1	2.4	2.7	.91	.78	.48	.45	.35	.00
29	1.7	2.0	.98	1.1	---	5.2	.99	.75	.66	.72	.41	.12
30	1.6	1.8	1.0	1.1	---	5.0	1.1	.69	1.1	.12	.29	.00
31	1.6	---	1.1	1.0	---	11	---	.70	---	.09	.15	---
TOTAL	47.53	54.8	43.30	31.03	36.49	82.9	178.90	25.38	26.93	28.42	6.84	2.74
MEAN	1.53	1.83	1.40	1.00	1.30	2.67	5.96	.82	.90	.92	.22	.091
MAX	2.9	3.5	2.0	1.2	2.4	11	14	1.7	5.5	8.2	1.7	.33
MIN	.78	1.3	.86	.80	.84	1.4	.91	.43	.32	.09	.00	.00
AC-FT	94	109	86	62	72	164	355	50	53	56	14	5.4

CAL YR 1980 TOTAL 6129.33 MEAN 16.7 MAX 388 MIN .78 AC-FT 12160
WTR YR 1981 TOTAL 565.26 MEAN 1.55 MAX 14 MIN .00 AC-FT 1120

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD

LOCATION.--Lat 43°34'01", long 96°42'39", in SW¼NW¼ sec.10, T.101 N., R.49 W., Minnehaha County, Hydrologic Unit 10170203, on right bank 20 ft (6 m) downstream from bridge on North Cliff Avenue and 4.1 mi (6.6 km) upstream from Slip Up Creek.

DRAINAGE AREA.--5,770 mi^2 (14,940 km^2), approximately, of which about 1,970 mi^2 (5,100 km^2) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--March 1962 to September 1971 (gage heights and discharge measurements only in files of Corps of Engineers). October 1971 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,294.18 ft (394.466 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Dec. 15, 1971, nonrecording gage 20 ft (6 m) upstream at same datum.

REMARKS.--Records good. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--10 years, 279 ft^3/s (7.901 m^3/s), 202,100 acre-ft/yr (249 hm^3/yr); median of yearly mean discharges, 170 ft^3/s (4.81 m^3/s), 123,000 acre-ft/yr (151 hm^3/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 6,020 ft^3/s (170 m^3/s) Mar. 24, 1978, gage height, 17.54 ft (5.346 m); maximum gage height, 17.62 ft (5.371 m) Mar. 22, 1978; minimum daily discharge, 2.1 ft^3/s (0.059 m^3/s) Jan. 14, 1972.

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood of Apr. 10, 1969, reached a stage of 27.45 ft (8.367 m), discharge, 40,700 ft^3/s (1,150 m^3/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 896 ft^3/s (25.4 m^3/s) at 0430 hours June 14, gage height, 8.13 ft (2.478 m), no peak above base of 1,000 ft^3/s (28.3 m^3/s); minimum daily discharge, 16 ft^3/s (0.453 m^3/s) Jan. 18.

Rating tables (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Sept. 27-30)

Oct. 1 to Apr. 30				May 1 to Sept. 30			
4.6	14	5.5	197	4.3	14	5.5	197
4.8	31	6.0	333	4.6	32	6.0	333
5.0	63	6.5	458	4.8	51	6.5	458
5.2	112			5.0	84		

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	41	58	48	28	23	66	111	79	34	30	79	41
2	36	53	27	31	22	70	109	74	40	30	67	39
3	37	61	46	28	21	71	112	74	38	30	62	38
4	32	57	45	25	23	85	134	79	34	30	64	33
5	33	53	46	28	22	88	118	77	32	30	56	26
6	39	55	45	29	22	73	115	72	27	30	46	27
7	42	59	43	27	21	69	120	72	28	34	43	34
8	40	59	45	25	17	72	118	69	30	38	41	32
9	41	50	41	25	20	82	116	65	38	34	38	30
10	43	55	38	21	20	85	113	61	39	32	44	27
11	31	52	38	17	21	82	108	61	32	30	38	26
12	32	57	40	22	19	82	104	64	47	28	34	22
13	37	58	38	22	20	85	106	65	82	30	33	19
14	40	56	36	23	22	77	107	59	448	33	64	23
15	40	54	41	21	21	77	100	54	81	32	47	23
16	83	51	43	20	25	75	104	50	47	32	31	23
17	74	55	47	19	29	73	108	47	43	34	40	24
18	54	51	46	16	36	72	110	53	39	30	40	24
19	57	49	34	20	36	71	110	49	39	32	38	21
20	62	51	29	22	39	68	108	45	36	30	36	18
21	59	52	27	23	46	69	108	39	36	31	37	22
22	60	53	29	24	45	69	109	43	40	32	32	23
23	72	54	29	24	46	70	101	44	41	49	29	22
24	66	55	27	25	56	64	98	38	41	35	43	23
25	58	50	24	26	59	71	103	38	40	29	114	31
26	52	56	26	26	59	69	95	43	37	25	76	65
27	60	59	26	26	73	62	96	41	34	28	57	30
28	62	60	25	26	73	90	91	41	34	40	56	26
29	58	58	30	26	---	135	88	39	37	67	50	25
30	60	56	33	26	---	77	82	32	34	82	43	23
31	59	---	32	24	---	90	---	38	---	74	47	---
TOTAL	1560	1647	1126	745	936	2389	3202	1705	1608	1121	1530	840
MEAN	50.3	54.9	36.3	24.0	33.4	77.1	107	55.0	53.6	36.2	49.4	28.0
MAX	83	61	48	31	73	135	134	79	448	82	114	65
MIN	31	49	24	16	17	62	82	32	27	25	29	18
AC-FT	3090	3270	2230	1480	1860	4740	6350	3380	3190	2220	3030	1670

CAL YR 1980 TOTAL 68281 MEAN 187 MAX 2040 MIN 24 AC-FT 135400
WTR YR 1981 TOTAL 18409 MEAN 50.4 MAX 448 MIN 16 AC-FT 36510

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD--Continued

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water year 1973 to current year.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	OXYGEN, DIS-SOLVED (MG/L) (00300)	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L) (00340)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	HARD-NESS (MG/L AS CACO3) (00900)	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)
OCT										
17...	1230	74	1290	8.5	10.5	9.6	52	2350	330	130
NOV										
21...	1100	54	1800	7.1	7.0	11.3	52	K1200	--	--
DEC										
23...	0930	27	1810	7.3	5.0	9.7	55	ND	--	--
JAN										
30...	1200	30	3200	--	5.0	--	80	--	450	130
FEB										
20...	1000	32	1650	7.4	7.0	11.8	44	K810	--	--
MAR										
19...	1100	79	1250	8.3	6.5	14.6	64	K12000	--	--
MAY										
01...	1100	83	1360	8.0	15.0	11.2	71	1850	450	250
28...	1100	41	1710	--	20.5	8.6	48	2170	--	--
JUN										
18...	1300	46	1490	8.7	21.5	8.8	36	K1875	--	--
JUL										
30...	1000	82	1060	8.0	20.0	7.6	61	K14400	350	180
AUG										
27...	0745	46	1130	7.7	20.0	5.5	73	3930	--	--
SEP										
28...	1630	26	2100	7.6	20.0	6.1	90	K170	--	--

DATE	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	ALKA-LINITY LAB (MG/L AS CACO3) (90410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)
OCT									
17...	78	36	140	47	3.3	13	--	210	180
NOV									
21...	--	--	--	--	--	--	--	--	--
DEC									
23...	--	--	--	--	--	--	--	--	--
JAN									
30...	100	46	460	68	9.5	17	320	330	670
FEB									
20...	--	--	--	--	--	--	--	--	--
MAR									
19...	--	--	--	--	--	--	--	--	--
MAY									
01...	97	50	110	34	2.3	9.7	200	290	150
28...	--	--	--	--	--	--	--	--	--
JUN									
18...	--	--	--	--	--	--	--	--	--
JUL									
30...	72	41	120	42	3.1	10	170	240	170
AUG									
27...	--	--	--	--	--	--	--	--	--
SEP									
28...	--	--	--	--	--	--	190	--	--

K Non-ideal colony count.

06482020 BIG SIOUX RIVER AT NORTH CLIFF AVENUE, AT SIOUX FALLS, SD--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, RESIDUE AT 105 DEG. C, SUS-PENDED (MG/L) (00530)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	SOLIDS, DIS-SOLVED (TONS PER DAY) (70302)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, AMMONIA TOTAL (MG/L AS NH4) (71845)
OCT									
17...	8.2	776	761	43	1.0	155	.37	5.40	6.5
NOV									
21...	--	969	--	21	1.3	141	--	--	--
DEC									
23...	--	1180	--	3	1.5	83.1	--	--	--
JAN									
30...	15	2050	1830	19	2.7	166	--	--	--
FEB									
20...	--	1000	--	10	1.3	87.7	--	--	--
MAR									
19...	--	723	--	45	.98	154	--	--	--
MAY									
01...	6.7	877	834	88	1.1	197	--	--	--
28...	--	962	--	23	1.3	106	--	--	--
JUN									
18...	--	994	--	33	1.3	123	--	--	--
JUL									
30...	12	790	767	42	1.0	176	--	--	--
AUG									
27...	--	653	--	51	.89	81.1	--	--	--
SEP									
28...	--	1200	--	20	1.6	84.9	--	--	--

DATE	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, TOTAL (MG/L AS NO3) (71887)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	CYANIDE TOTAL (MG/L AS CN) (00720)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI) (01067)	SILVER, TOTAL RECOV-ERABLE (UG/L AS AG) (01077)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)
OCT									
17...	8.10	8.5	38	3.90	12	.00	100	1	60
NOV									
21...	--	--	--	--	--	.00	0	1	30
DEC									
23...	--	--	--	--	--	5.0	0	0	30
JAN									
30...	--	--	--	--	--	.02	100	1	40
FEB									
20...	--	--	--	3.30	--	.00	49	0	20
MAR									
19...	--	--	--	--	--	.00	0	0	20
MAY									
01...	--	--	--	--	--	.01	0	0	20
28...	--	--	--	--	--	.02	0	1	20
JUN									
18...	--	--	--	--	--	.01	0	1	20
JUL									
30...	--	--	--	--	--	.00	0	0	30
AUG									
27...	--	--	--	--	--	.00	0	0	40
SEP									
28...	--	--	--	--	--	.00	0	1	40

06482610 SPLIT ROCK CREEK AT CORSON, SD

LOCATION.--Lat 43°36'59", long 96°33'54", in NE¼NW¼ sec.26, T.102 N., R.48 W., Minnehaha County, Hydrologic Unit 10170203, on left bank 6 ft (2 m) downstream from highway bridge, 0.3 mi (0.5 km) east of Corson and 3.4 mi (5.5 km) upstream from mouth.

DRAINAGE AREA.--475 mi² (1,230 km²), approximately.

PERIOD OF RECORD.--October 1965 to current year. February 1951 to September 1965 (gage heights and discharge measurements only in files of Corps of Engineers).

GAGE.--Water-stage recorder. Datum of gage is 1,304.22 ft (397.526 m) National Geodetic Vertical Datum of 1929 (levels by Corps of Engineers). Prior to Aug. 15, 1964, nonrecording gage at datum 0.15 ft (0.046 m) higher and Aug. 15, 1964, to Sept. 3, 1970, nonrecording gage at present site and datum.

REMARKS.--Records good except those for winter periods, which are poor. Several observations of water temperature and specific conductance were made during the year.

AVERAGE DISCHARGE.--16 years, 63.7 ft³/s (1.804 m³/s), 46,150 acre-ft/yr (56.9 hm³/yr); median of yearly mean discharges, 46 ft³/s (1.30 m³/s), 33,300 acre-ft/yr (41 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 17,800 ft³/s (504 m³/s) Apr. 8, 1969, gage height, 15.00 ft (4.572 m); no flow at times most years.

EXTREMES OUTSIDE PERIOD OF RECORD.--Maximum stage since 1951, 15.41 ft (4.697 m) June 17, 1957, discharge, 19,300 ft³/s (547 m³/s).

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 1,110 ft³/s (31.4 m³/s) at 0230 hours, June 13, gage height, 5.69 ft (1.734 m), no other peak above base of 500 ft³/s (14.2 m³/s); minimum daily discharge, 1.9 ft³/s (0.054 m³/s) July 18.

Rating table (gage height, in feet, and discharge, in cubic feet per second)
(Shifting-control method used Mar. 18 to Apr. 27; stage-discharge relation affected by ice Dec. 1-12, Dec. 21 to Mar. 17)

1.6	1.5	2.0	17	2.6	84
1.7	3.4	2.1	22	3.0	155
1.8	7.2	2.3	41	4.0	395

DISCHARGE, IN CUBIC FEET PER SECOND, [illegible]TER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VAL[illegible]

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	4.0	12	13	7.7	7.2	18	25	14	4.1	6.0	5.5	9.4
2	4.2	14	12	7.7	6.9	19	29	13	3.3	4.8	7.4	8.2
3	4.7	16	12	7.7	6.7	19	28	13	3.1	9.4	11	7.8
4	7.5	13	12	7.6	6.6	20	29	13	2.5	13	11	6.7
5	6.6	12	12	7.4	6.5	20	30	13	2.7	11	16	6.3
6	5.8	12	12	7.2	6.4	19	30	11	3.1	8.9	12	6.4
7	5.5	12	12	7.0	6.4	18	25	11	3.9	8.0	10	7.3
8	5.6	10	12	6.8	6.3	18	25	10	4.2	6.8	8.6	7.2
9	5.8	11	11	6.5	6.3	19	24	9.5	5.1	4.8	5.7	7.3
10	6.0	11	11	6.3	6.3	20	24	10	4.7	3.2	5.8	6.7
11	6.8	12	11	5.8	6.4	20	22	8.4	4.2	3.7	3.9	6.0
12	9.5	12	11	6.1	6.4	21	22	8.4	5.2	3.2	3.5	5.0
13	9.8	12	11	6.3	6.6	21	22	8.9	386	3.0	3.6	4.7
14	9.4	13	11	6.5	6.9	20	22	8.9	260	3.2	7.0	4.2
15	9.0	12	11	6.7	7.3	19	22	8.0	91	2.6	8.0	3.9
16	12	12	11	6.6	7.9	17	20	7.1	36	2.1	10	3.4
17	13	12	11	6.5	8.9	15	20	7.2	22	2.9	11	3.3
18	14	12	10	6.2	9.7	14	19	7.2	16	1.9	10	3.4
19	12	13	9.7	6.4	11	12	19	5.8	13	2.6	7.8	3.3
20	11	13	9.3	6.8	11	12	20	5.2	11	2.0	5.8	4.0
21	9.4	13	8.9	7.1	12	12	20	4.9	9.7	2.0	5.2	4.1
22	8.2	13	8.6	7.4	13	13	22	5.4	9.3	4.4	4.0	3.7
23	9.8	13	8.4	7.6	14	13	21	4.6	9.1	7.1	4.9	3.7
24	9.5	13	8.2	7.7	15	12	20	4.9	8.9	9.5	5.6	3.8
25	8.5	14	8.2	7.8	16	12	20	4.2	7.6	9.8	9.1	4.1
26	8.2	14	8.1	7.9	17	12	20	4.5	7.2	7.3	18	4.6
27	9.6	13	8.0	8.1	17	12	18	4.6	6.0	6.1	19	4.3
28	8.6	14	8.0	8.2	18	18	17	4.8	6.0	5.2	17	4.0
29	8.7	14	8.0	8.4	---	25	16	5.3	6.0	5.1	16	4.6
30	8.9	14	7.8	8.1	---	28	15	4.3	6.4	4.8	14	4.4
31	9.5	---	7.7	7.5	---	29	---	3.7	---	5.3	12	---
TOTAL	261.1	381	314.9	221.6	269.7	547	666	243.8	959.3	169.7	288.4	155.8
MEAN	8.42	12.7	10.2	7.15	9.63	17.6	22.2	7.86	32.0	5.47	9.30	5.19
MAX	14	16	13	8.4	18	29	30	14	386	13	19	9.4
MIN	4.0	10	7.7	5.8	6.3	12	15	3.7	2.5	1.9	3.5	3.3
AC-FT	518	756	625	440	535	1080	1320	484	1900	337	572	309

CAL YR 1980 TOTAL 16615.6 MEAN 45.4 MAX 840 MIN 3.8 AC-FT 32960
WTR YR 1981 TOTAL 4478.3 MEAN 12.3 MAX 386 MIN 1.9 AC-FT 8880

06485500 BIG SIOUX RIVER AT AKRON, IA

LOCATION.--Lat 42°49'42", long 96°33'45", in NW¼SW¼ sec.31, T.93 N., R.48 W., Plymouth County, Hydrologic Unit 10170203, on left bank at west edge of Akron, 0.6 mi (1.0 km) downstream from bridge on State Highway 48, and 2.3 mi (3.7 km) upstream from Union Creek.

DRAINAGE AREA.--9,030 mi² (23,390 km²), approximately, of which about 1,970 mi² (5,100 km²) is probably noncontributing.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--October 1928 to current year.

REVISED RECORDS.--WSP 1309: 1929(M), 1931-33(M), 1936(M), 1938(M), 1940(M). WSP 1389: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,118.90 ft (341.041 m) National Geodetic Vertical Datum of 1929. Prior to Dec. 3, 1934, nonrecording gage at bridge 300 ft (91 m) upstream at same datum.

REMARKS.--Records good except those for the winter months, which are poor. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--53 years, 848 ft³/s (24.02 m³/s), 614,400 acre-ft/yr (758 hm³/yr); median of yearly mean discharges, 730 ft³/s (20.7 m³/s), 529,000 acre-ft/yr (650 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 80,800 ft³/s (2,290 m³/s) Apr. 9, 1969, gage height, 22.99 ft (7.007 m); minimum daily, 4.0 ft³/s (0.11 m³/s) Jan. 17, 1977.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 3,180 ft³/s (90.1 m³/s) at 0130 hours, June 17, gage height, 10.75 ft (3.277 m), no peak above base of 3,500 ft³/s (99.1 m³/s); minimum daily discharge, 78 ft³/s (2.21 m³/s) Feb. 12.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	189	207	222	141	98	318	467	243	128	310	199	238
2	181	204	211	140	97	279	477	230	147	292	225	225
3	175	202	190	132	96	267	479	234	174	335	221	214
4	179	197	174	125	96	262	486	246	135	884	210	200
5	179	194	166	119	95	257	482	241	126	766	203	186
6	174	194	156	117	94	255	479	231	124	664	201	177
7	172	197	152	115	93	248	493	230	119	521	282	177
8	171	190	146	114	92	247	465	230	116	419	290	170
9	166	191	143	110	89	240	437	226	116	356	253	162
10	164	187	140	108	85	236	420	212	157	318	220	152
11	162	188	142	105	80	236	397	209	131	290	193	149
12	159	188	146	103	78	238	375	214	126	270	175	140
13	158	186	148	101	80	240	366	221	124	250	164	131
14	164	186	150	99	84	233	350	218	576	227	179	123
15	164	189	153	102	88	237	331	211	2130	211	176	117
16	167	189	157	104	98	229	328	204	2910	195	199	115
17	187	189	158	106	115	229	325	198	2650	187	221	114
18	196	185	160	106	134	224	309	197	1700	231	276	112
19	204	184	150	105	175	221	303	186	1140	407	287	111
20	225	191	130	104	235	216	298	178	900	183	252	110
21	213	191	125	105	295	218	300	169	752	166	221	107
22	203	193	118	106	355	217	309	167	643	159	200	100
23	208	193	117	109	320	214	309	166	559	153	188	99
24	207	191	116	111	305	212	297	153	573	147	180	97
25	203	176	116	114	299	208	297	150	518	149	182	100
26	202	151	117	116	302	205	288	149	449	151	195	131
27	220	160	121	115	334	199	278	145	401	187	191	127
28	214	176	128	110	330	223	271	146	377	193	231	106
29	205	185	134	105	---	286	258	138	368	199	260	107
30	202	204	138	102	---	311	248	133	332	195	256	108
31	207	---	140	100	---	370	---	131	---	183	246	---
TOTAL	5820	5662	4568	3449	4642	7575	10922	6006	18903	9198	6778	4205
MEAN	188	189	147	111	166	244	364	194	630	297	219	140
MAX	225	207	222	141	355	370	493	246	2910	884	290	238
MIN	158	151	116	99	78	199	248	131	116	147	164	97
AC-FT	11540	11230	9060	6840	9210	15030	21660	11910	37490	18240	13440	8340

CAL YR 1980 TOTAL 272598 MEAN 745 MAX 5340 MIN 116 AC-FT 540700
WTR YR 1981 TOTAL 87728 MEAN 240 MAX 2910 MIN 78 AC-FT 174000

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued
(National stream-quality accounting network station)
(National pesticide water-monitoring network station)

WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1967 to current year.

PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: October 1974 to current year.
WATER TEMPERATURES: October 1974 to current year.

EXTREMES FOR PERIOD OF DAILY RECORD.--
SPECIFIC CONDUCTANCE: Maximum daily, 2,310 micromhos Jan. 20, 1977; minimum daily, 260 micromhos Mar. 20, 23, 1978.
WATER TEMPERATURES: Maximum daily, 31.0°C Feb. 19, 1975, July 23, 1976, July 11, 1981; minimum daily, 0.0°C on many days during winter periods.

EXTREMES FOR CURRENT YEAR.--
SPECIFIC CONDUCTANCE: Maximum daily, 1,550 micromhos Feb. 12; minimum daily, 380 micromhos June 17.
WATER TEMPERATURES: Maximum daily, 31.0°C July 11; minimum daily, 0.0°C on many days during winter period.

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	SPECIFIC CONDUCTANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPERATURE (DEG C) (00010)	TURBIDITY (NTU) (00076)	OXYGEN, DISSOLVED (MG/L) (00300)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML) (31625)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML) (31673)	HARDNESS (MG/L AS CACO3) (00900)
OCT 21...	0930	215	1100	8.7	8.0	5.0	12.4	K62	470	450
NOV 20...	1300	195	1110	7.9	5.1	7.5	11.1	ND	K25	460
DEC 16...	1530	156	1240	7.5	.5	4.9	11.9	K40	K60	510
FEB 26...	1330	316	840	7.9	4.0	19	12.8	K125	K75	330
MAR 25...	1400	208	880	8.9	13.0	36	--	<1	K124	320
APR 29...	1300	256	910	8.6	17.0	32	13.4	620	K40	370
MAY 27...	1300	139	870	--	22.5	17	13.4	K80	K30	330
JUN 17...	1500	2930	330	7.8	20.0	420	6.8	K7800	8000	180
JUL 29...	1100	203	780	8.5	19.0	32	11.2	2100	410	320
AUG 26...	1030	200	760	8.5	22.5	36	9.7	K170	200	280
SEP 29...	1200	108	920	8.9	17.0	13	9.4	2500	1400	310

DATE	HARDNESS, NONCARBONATE (MG/L CACO3) (00902)	CALCIUM DISSOLVED (MG/L AS CA) (00915)	MAGNESIUM, DISSOLVED (MG/L AS MG) (00925)	SODIUM, DISSOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM ADSORPTION RATIO (00931)	POTASSIUM, DISSOLVED (MG/L AS K) (00935)	SULFATE DISSOLVED (MG/L AS SO4) (00945)	ALKALINITY LAB (MG/L AS CACO3) (90410)	CHLORIDE, DISSOLVED (MG/L AS CL) (00940)
OCT 21...	200	110	43	69	25	1.4	7.5	230	250	84
NOV 20...	210	110	44	47	18	1.0	6.1	220	250	55
DEC 16...	210	120	51	80	25	1.5	7.2	240	300	98
FEB 26...	150	82	30	46	23	1.1	5.1	190	180	56
MAR 25...	220	67	37	57	28	1.4	4.8	260	97	72
APR 29...	210	72	47	48	22	1.1	5.7	250	160	58
MAY 27...	200	61	44	46	23	1.1	5.5	240	130	56
JUN 17...	80	48	15	9.5	10	.3	4.8	70	100	14
JUL 29...	170	69	37	71	32	1.9	6.6	200	150	100
AUG 26...	140	52	37	50	27	1.5	6.3	170	140	66
SEP 29...	180	58	41	77	34	2.1	6.7	210	130	100

< Less than.
K Non-ideal colony count.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	FLUORIDE, DISSOLVED (MG/L AS F) (00950)	SILICA, DISSOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DISSOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L) (70301)	SOLIDS, DISSOLVED (TONS PER AC-FT) (70303)	SOLIDS, DISSOLVED (TONS PER DAY) (70302)	SOLIDS, RESIDUE AT 105 DEG. C, SUSPENDED (MG/L) (00530)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N) (00631)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N) (00608)
OCT 21...	.3	6.4	729	706	.99	423	--	1.3	1.4	.000
NOV 20...	.4	9.5	699	653	.95	368	--	2.5	2.6	.020
DEC 16...	.4	15	837	807	1.1	353	--	3.5	3.5	1.40
FEB 26...	.3	12	514	544	.70	439	--	3.2	2.9	1.30
MAR 25...	.3	.4	529	557	.72	297	--	.00	.07	.020
APR 29...	.4	.2	711	578	.97	491	--	.03	.06	.080
MAY 27...	.3	.3	563	534	.77	211	--	.26	.00	.070
JUN 17...	.3	11	255	285	.35	2020	--	2.8	2.6	.260
JUL 29...	.3	.2	595	575	.81	326	--	.09	.09	.090
AUG 26...	.5	.7	461	467	.63	289	--	<.09	<.09	.090
SEP 29...	.4	.1	592	571	.81	173	--	.01	.52	.040

DATE	NITROGEN, AMMONIA DISSOLVED (MG/L AS NH4) (71846)	NITROGEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N) (00607)	NITROGEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N) (00623)	NITROGEN, NH4 + ORG. SUSP. TOTAL (MG/L AS N) (00624)	NITROGEN, AMMONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITROGEN DISSOLVED (MG/L AS N) (00602)	NITROGEN, TOTAL (MG/L AS N) (00600)	NITROGEN, TOTAL (MG/L AS NO3) (71887)
OCT 21...	.00	.020	.88	2.0	.88	1.1	2.00	2.2	3.4	15
NOV 20...	.03	.020	1.1	1.4	1.1	.30	1.40	3.6	4.0	18
DEC 16...	1.8	1.40	.90	1.5	2.3	.60	2.90	5.8	6.4	28
FEB 26...	1.7	1.50	1.4	1.6	2.7	.40	3.10	5.9	6.0	27
MAR 25...	.03	.020	1.1	4.4	1.1	3.3	4.40	1.1	4.5	20
APR 29...	.10	.060	1.0	2.5	1.1	1.5	2.60	1.1	2.7	12
MAY 27...	.09	.060	.76	2.7	.83	2.0	2.80	1.1	2.8	12
JUN 17...	.33	.470	1.4	5.6	1.7	4.4	6.10	4.5	8.7	39
JUL 29...	.12	.170	1.0	2.1	1.1	1.2	2.30	1.2	2.4	11
AUG 26...	.12	<.060	.62	--	.71	2.5	3.20	.86	--	--
SEP 29...	.05	.030	1.5	3.5	1.5	2.0	3.50	1.5	4.0	18

< Less than.

BEST DOCUMENT AVAILABLE

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	PHOS-PHORUS, ORTHO, TOTAL (MG/L AS P) (70507)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	PHOS-PHORUS TOTAL (MG/L AS PO4) (71886)	PHOS-PHATE, TOTAL (MG/L AS PO4) (00650)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CARBON, ORGANIC SUS-PENDED TOTAL (MG/L AS C) (00689)	CARBON, ORGANIC TOTAL (MG/L AS C) (00680)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML) (60050)
OCT									
21...	--	.530	.740	2.3	--	14	--	--	--
NOV									
20...	--	.660	.640	2.0	--	--	--	5.1	--
DEC									
16...	--	.770	.900	2.8	--	--	--	11	--
FEB									
26...	--	.670	.760	2.3	--	--	--	8.6	--
MAR									
25...	--	.100	.750	2.3	--	--	--	24	270000
APR									
29...	--	.050	.480	1.5	--	11	9.6	--	--
MAY									
27...	--	.060	.450	1.4	--	30	--	30	260000
JUN									
17...	--	.330	1.30	4.0	--	--	--	23	7100
JUL									
29...	--	<.010	.420	1.3	--	8.5	.8	--	330000
AUG									
26...	--	.020	.480	1.5	--	--	--	13	430000
SEP									
29...	--	<.010	.340	1.0	--	--	--	22	--

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	SEDI-MENT, SUS-PENDED (MG/L) (80154)	SEDI-MENT, DIS-CHARGE, SUS-PENDED (T/DAY) (80155)	SED. SUSP. SIEVE DIAM. % FINER THAN .062 MM (70331)	SED. SUSP. FALL DIAM. % FINER THAN .002 MM (70337)	SED. SUSP. FALL DIAM. % FINER THAN .004 MM (70338)	SED. SUSP. FALL DIAM. % FINER THAN .016 MM (70340)	SED. SUSP. FALL DIAM. % FINER THAN .062 MM (70342)	SED. SUSP. FALL DIAM. % FINER THAN .125 MM (70343)	SED. SUSP. FALL DIAM. % FINER THAN .250 MM (70344)	SED. SUSP. FALL DIAM. % FINER THAN .500 MM (70345)
OCT												
21...	0930	215	27	16	--	--	--	--	56	80	100	--
NOV												
20...	1300	195	46	24	--	--	--	--	90	91	100	--
DEC												
16...	1530	156	51	21	--	--	--	--	--	--	--	--
JAN												
28...	1445	--	45	--	--	--	--	--	85	95	100	--
FEB												
26...	1330	316	23	20	--	--	--	--	100	--	--	--
MAR												
25...	1400	208	103	58	--	--	--	--	96	--	100	--
APR												
29...	1300	256	167	115	65	--	--	--	87	95	100	--
MAY												
27...	1300	139	114	43	74	--	--	--	90	95	100	--
JUN												
17...	1500	2930	984	7470	92	--	--	--	96	99	100	--
JUL												
29...	1100	203	150	82	76	--	--	--	100	--	--	--
AUG												
26...	1030	200	177	96	66	--	--	--	100	--	--	--
SEP												
29...	1200	108	7420	2160	100	--	--	--	100	--	--	--

< Less than.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	ARSENIC TOTAL (UG/L AS AS) (01002)	ARSENIC SUS-PENDED TOTAL (UG/L AS AS) (01001)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD) (01027)	CADMIUM SUS-PENDED RECOV-ERABLE (UG/L AS CD) (01026)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR) (01034)	CHRO-MIUM, SUS-PENDED RECOV. (UG/L AS CR) (01031)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO) (01037)
OCT											
21...	0930	4	0	5	0	--	<1	0	0	0	3
APR											
29...	1300	5	2	3	0	--	<1	10	10	0	2
JUL											
29...	1100	6	3	3	0	--	<1	10	10	0	0

DATE	COBALT, SUS-PENDED RECOV-ERABLE (UG/L AS CO) (01036)	COBALT, DIS-SOLVED (UG/L AS CO) (01035)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU) (01042)	COPPER, SUS-PENDED RECOV-ERABLE (UG/L AS CU) (01041)	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE) (01045)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB) (01051)	LEAD, SUS-PENDED RECOV-ERABLE (UG/L AS PB) (01050)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN) (01055)
OCT											
21...	--	<3	15	13	2	880	<10	0	0	0	310
APR											
29...	--	<3	8	7	1	2400	30	0	0	4	590
JUL											
29...	--	<3	7	5	2	2800	22	5	1	4	580

DATE	MANGA-NESE, SUS-PENDED RECOV. (UG/L AS MN) (01054)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MERCURY SUS-PENDED RECOV-ERABLE (UG/L AS HG) (71895)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	SELE-NIUM, TOTAL (UG/L AS SE) (01147)	SELE-NIUM, SUS-PENDED TOTAL (UG/L AS SE) (01146)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN) (01092)	ZINC, SUS-PENDED RECOV-ERABLE (UG/L AS ZN) (01091)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)
OCT											
21...	260	50	.3	.3	.0	2	0	2	30	--	<3
APR											
29...	580	10	.2	.1	.1	0	0	2	20	10	7
JUL											
29...	530	12	.1	.1	.0	2	2	0	20	0	27

DATE	TIME	ALDRIN, TOTAL (UG/L) (39330)	CHLOR-DANE, TOTAL (UG/L) (39350)	DDD, TOTAL (UG/L) (39360)	DDE, TOTAL (UG/L) (39365)	DDT, TOTAL (UG/L) (39370)	DI-AZINON, TOTAL (UG/L) (39570)	DI-ELDRIN TOTAL (UG/L) (39380)	ENDRIN, TOTAL (UG/L) (39390)	ETHION, TOTAL (UG/L) (39398)
NOV										
20...	1500	ND	ND	ND	ND	ND	ND	ND	ND	ND

DATE	HEPTA-CHLOR, TOTAL (UG/L) (39410)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L) (39420)	LINDANE TOTAL (UG/L) (39340)	MALA-THION, TOTAL (UG/L) (39530)	METH-OXY-CHLOR, TOTAL (UG/L) (39480)	METHYL PARA-THION, TOTAL (UG/L) (39600)	METHYL TRI-THION, TOTAL (UG/L) (39790)	PARA-THION, TOTAL (UG/L) (39540)	TOX-APHENE, TOTAL (UG/L) (39400)	TOTAL TRI-THION (UG/L) (39786)
NOV										
20...	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

< Less than.
ND Not detected.

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 20,80		MAR 25,81		MAY 27,81		JUN 17,81	
TIME	1300		1400		1300		1500	
TOTAL CELLS/ML	49000		270000		260000		7100	
DIVERSITY: DIVISION	1.1		0.3		1.2		0.7	
.CLASS	1.1		0.3		1.2		0.7	
..ORDER	1.2		0.4		1.3		1.5	
...FAMILY	1.4		0.4		2.0		2.2	
....GENUS	1.6		0.4		2.3		2.8	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)								
.CHLOROPHYCEAE								
..CHLOROCOCCALES								
...CHARACIACEAE								
....SCHROEDERIA	--	-	--	-	--	-	--	-
...COELASTRACEAE								
....COELASTRUM	--	-	--	-	--	-	--	-
...HYDRODICTYACEAE								
....PEDIASTRUM	--	-	--	-	--	-	--	-
...MICRACTINIACEAE								
....GOLENKINIA	250	1	--	-	--	-	--	-
....MICRACTINIUM	--	-	1800	1	21000	8	--	-
...OOCYSTACEAE								
....ANKISTRODESMUS	1500	3	--	-	*	0	--	-
....CHODATELLA	--	-	--	-	--	-	--	-
....DICTYOSPHAERIUM	--	-	--	-	20000	8	--	-
....GLOEOACTINIUM	--	-	--	-	--	-	--	-
....KIRCHNERIELLA	--	-	--	-	--	-	--	-
....NEPHROCYTIUM	--	-	--	-	2600	1	--	-
....POLYEDRIOPSIS	--	-	--	-	--	-	--	-
....SELENASTRUM	750	2	--	-	--	-	--	-
....TETRAEDRON	--	-	--	-	--	-	--	-
....TREUBARIA	--	-	--	-	--	-	--	-
....WESTELLA	--	-	--	-	--	-	--	-
...SCENEDESMACEAE								
....ACTINASTRUM	2000	4	--	-	120000*	45	--	-
....CRUCIGENIA	--	-	--	-	--	-	--	-
....SCENEDESMUS	1200	3	3500	1	14000	5	1400*	20
....TETRASTRUM	--	-	--	-	--	-	--	-
..TETRASPORALES								
...PALMELLACEAE								
....SPHAEROCYSTIS	--	-	--	-	--	-	--	-
..VOLVOCALES								
...CHLAMYDOMONADACEAE								
....CHLAMYDOMONAS	750	2	--	-	--	-	--	-
CHRYSOPHYTA								
.BACILLARIOPHYCEAE								
..CENTRALES								
...COSCINODISCACEAE								
....CYCLOTELLA	37000*	74	250000*	95	58000*	22	2400*	33
....MELOSIRA	--	-	--	-	--	-	--	-
....STEPHANODISCUS	--	-	--	-	--	-	980	14
..PENNALES								
...CYMBELLACEAE								
....AMPHORA	--	-	--	-	--	-	280	4
....CYMBELLA	--	-	--	-	--	-	140	2
....RHOPALODIA	--	-	--	-	--	-	140	2
...FRAGILARIACEAE								
....SYNEDRA	--	-	--	-	--	-	--	-
...GOMPHONEMATACEAE								
....GOMPHONEMA	--	-	--	-	--	-	140	2
...NAVICULACEAE								
....NAVICULA	--	-	--	-	--	-	700	10
...NITZSCHIACEAE								
....NITZSCHIA	250	1	--	-	1300	1	420	6
...SURIRELLACEAE								
....CYMATOPLEURA	--	-	--	-	--	-	420	6
....SURIRELLA	--	-	1800	1	*	0	140	2
CYANOPHYTA (BLUE-GREEN ALGAE)								
.CYANOPHYCEAE								
..CHROOCOCCALES								
...CHROOCOCCACEAE								
....AGMENELLUM	4000	8	--	-	--	-	--	-
....ANACYSTIS	1500	3	5300	2	23000	9	--	-
....COCCOCHLORIS	--	-	--	-	--	-	--	-
..HORMOGONALES								
...OSCILLATORIACEAE								
....OSCILLATORIA	--	-	--	-	--	-	--	-
....SPIRULINA	--	-	--	-	*	0	--	-

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

PHYTOPLANKTON ANALYSES

DATE	NOV 20,80		MAR 25,81		MAY 27,81		JUN 17,81	
TIME	1300		1400		1300		1500	
ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
EUGLENOPHYTA (EUGLENOIDS)								
.EUGLENOPHYCEAE								
..EUGLENALES								
...EUGLENACEAE								
....EUGLENA	--	-	1800	1	*	0	--	-
....TRACHELOMONAS	500	1	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)								
.DINOPHYCEAE								
..PERIDINIALES								
...GLENODINIACEAE								
....GLENODINIUM	--	-	--	-	--	-	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
 * - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

DATE		JUL 29,81	AUG 26,81	SEP 29,81
TIME		1100	1030	1200
TOTAL CELLS/ML		330000	430000	270000
DIVERSITY:	DIVISION	1.5	1.2	1.1
	.CLASS	1.5	1.2	1.1
	..ORDER	2.2	1.3	1.3
	...FAMILY	2.6	1.8	2.1
	....GENUS	3.2	2.6	2.5

ORGANISM	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT	CELLS /ML	PER- CENT
CHLOROPHYTA (GREEN ALGAE)						
.CHLOROPHYCEAE						
..CHLOROCOCCALES						
...CHARACIACEAE						
....SCHROEDERIA	--	-	*	0	--	-
...COELASTRACEAE						
....COELASTRUM	--	-	--	-	13000	5
...HYDRODICTYACEAE						
....PEDIASTRUM	--	-	5600	1	--	-
...MICRACTINIACEAE						
....GOLENKINIA	5300	2	16000	4	3300	1
....MICRACTINIUM	7900	2	11000	3	16000	6
...OOCYSTACEAE						
....ANKISTRODESMUS	1800	1	*	0	9800	4
....CHODATELLA	--	-	--	-	3300	1
....DICTYOSPHAERIUM	6100	2	6400	1	6500	2
....GLOEOACTINIUM	19000	6	8800	2	--	-
....KIRCHNERIELLA	2600	1	8800	2	--	-
....NEPHROCYTIUM	--	-	--	-	--	-
....POLYEDRIOPSIS	--	-	*	0	--	-
....SELENASTRUM	--	-	--	-	--	-
....TETRAEDRON	--	-	*	0	--	-
....TREUBARIA	--	-	3200	1	--	-
....WESTELLA	--	-	3200	1	--	-
...SCENEDESMACEAE						
....ACTINASTRUM	7000	2	30000	7	20000	7
....CRUCIGENIA	18000	5	--	-	--	-
....SCENEDESMUS	14000	4	19000	4	72000#	27
....TETRASTRUM	--	-	3200	1	--	-
..TETRASPORALES						
...PALMELLACEAE						
....SPHAEROCYSTIS	35000	11	--	-	--	-
..VOLVOCALES						
...CHLAMYDOMONADACEAE						
....CHLAMYDOMONAS	2600	1	*	0	--	-
CHRYSOPHYTA						
.BACILLARIOPHYCEAE						
..CENTRALES						
...COSCINODISCACEAE						
....CYCLOTELLA	62000#	19	24000	6	110000#	41
....MELOSIRA	5300	2	7200	2	--	-
....STEPHANODISCUS	--	-	--	-	--	-

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

PHYTOPLANKTON ANALYSES

DATE	JUL 29,81		AUG 26,81		SEP 29,81	
TIME	1100		1030		1200	
ORGANISM	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT	CELLS /ML	PER-CENT
..PENNALES						
...CYMBELLACEAE						
....AMPHORA	--	-	--	-	--	-
....CYMBELLA	--	-	--	-	--	-
....RHOPALODIA	--	-	--	-	--	-
...FRAGILARIACEAE						
....SYNEDRA	*	0	--	-	--	-
...GOMPHONEMATACEAE						
....GOMPHONEMA	--	-	--	-	--	-
...NAVICULACEAE						
....NAVICULA	*	0	--	-	--	-
...NITZSCHIACEAE						
....NITZSCHIA	5300	2	4800	1	11000	8
...SURIRELLACEAE						
....CYMATOPLEURA	--	-	--	-	--	-
....SURIRELLA	--	-	*	0	--	-
CYANOPHYTA (BLUE-GREEN ALGAE)						
.CYANOPHYCEAE						
..CHROOCOCCALES						
...CHROOCOCCACEAE						
....AGMENELLUM	110000#	39	--	-	--	-
....ANACYSTIS	6800	3	280000#	56	--	-
....COCCOCHLORIS	--	-	34000	8	--	-
..HORMOGONALES						
...OSCILLATORIACEAE						
....OSCILLATORIA	18000	5	--	-	--	-
....SPIRULINA	--	-	--	-	--	-
EUGLENOPHYTA (EUGLENOIDS)						
.EUGLENOPHYCEAE						
..EUGLENALES						
...EUGLENACEAE						
....EUGLENA	--	-	--	-	5300	1
....TRACHELOMONAS	--	-	--	-	--	-
PYRRHOPHYTA (FIRE ALGAE)						
.DINOPHYCEAE						
..PERIDINIALES						
...GLENODINIACEAE						
....GLENODINIUM	--	-	*	0	--	-

NOTE: # - DOMINANT ORGANISM; EQUAL TO OR GREATER THAN 15%
* - OBSERVED ORGANISM, MAY NOT HAVE BEEN COUNTED; LESS THAN 1/2%

06485500 BIG SIOUX RIVER AT AKRON, IA--Continued

SPECIFIC CONDUCTANCE (MICROMHOS/CM AT 25 DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	860	1040	1130	1240	1370	900	1130	950	960	750	950	820
2	880	1030	1140	1200	1380	900	1020	930	870	780	920	820
3	900	1000	1160	1260	1440	1020	920	900	880	710	980	800
4	930	1000	1170	1340	1440	990	960	900	900	600	980	800
5	960	1000	1070	1280	1380	970	990	940	870	740	960	800
6	970	1040	1260	1280	1400	980	950	910	900	970	940	830
7	910	1040	1200	1300	1360	980	940	900	990	1260	910	820
8	890	1060	1200	1300	1360	990	930	920	1020	870	770	800
9	880	1050	1260	1280	1360	1020	930	950	1020	810	710	800
10	920	1040	1260	1300	1360	1090	900	920	1000	770	720	800
11	960	980	1290	1380	1360	1040	880	900	950	780	730	850
12	1040	1040	1300	1400	1550	1040	920	910	950	790	750	880
13	1070	1060	1300	1400	1510	1040	920	930	960	780	760	890
14	1060	1060	1300	1370	1450	1000	960	930	760	770	770	910
15	1000	1080	1300	1320	1370	900	950	930	500	780	830	910
16	910	1100	1300	1280	1360	940	920	920	480	780	850	920
17	1000	1090	1300	1280	1340	950	880	950	380	800	870	900
18	1040	1060	1300	1290	1040	950	870	930	460	810	810	880
19	1120	1060	1300	1290	1000	950	770	910	540	460	790	880
20	1100	1060	1300	1300	930	950	820	930	630	840	760	840
21	1130	1060	1310	1300	920	920	800	930	700	840	790	840
22	1110	1120	1320	1300	870	890	830	950	760	870	870	890
23	1100	1130	1380	1300	820	870	830	970	790	870	790	950
24	1050	1090	1320	1300	820	920	820	980	830	880	810	970
25	990	1100	1320	1220	820	950	790	960	780	900	800	980
26	1020	1140	1320	1200	850	990	770	930	830	910	850	970
27	990	1160	1320	1210	830	1000	770	910	830	950	820	940
28	980	1180	1420	1200	880	970	810	930	830	1070	840	900
29	1020	1160	1420	1220	---	910	820	950	790	1020	1170	970
30	1040	1160	1340	1240	---	970	820	960	770	950	1160	1020
31	1020	---	1320	1240	---	1010	---	980	---	970	960	---
MEAN	995	1070	1280	1280	1200	968	887	933	798	841	859	879

TEMPERATURE, WATER (DEG. C), WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
ONCE-DAILY

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	16.0	5.0	1.0	1.0	.0	2.0	10.0	12.0	19.0	24.0	23.0	17.0
2	13.0	6.0	.0	1.0	.0	1.0	10.0	13.0	20.0	25.0	25.0	15.0
3	9.0	7.0	.0	.0	.0	3.0	13.0	17.0	18.0	24.0	25.0	18.0
4	7.0	7.0	.0	.0	.0	3.0	12.0	15.0	21.0	22.0	24.0	16.0
5	8.0	7.0	2.0	.0	.0	3.0	8.0	13.0	23.0	24.0	26.0	18.0
6	11.0	6.0	1.0	1.0	.0	---	8.0	14.0	22.0	26.0	25.0	22.0
7	12.0	7.0	.0	.0	.0	---	10.0	13.0	23.0	26.0	24.0	20.0
8	13.0	8.0	.0	.0	.0	---	11.0	14.0	22.0	27.0	23.0	17.0
9	10.0	7.0	.0	.0	.0	---	11.0	15.0	22.0	24.0	23.0	18.0
10	12.0	6.0	.0	.0	.0	---	13.0	10.0	18.0	28.0	21.0	19.0
11	10.0	6.0	.0	.0	.0	---	12.0	10.0	21.0	31.0	21.0	21.0
12	9.0	6.0	1.0	.0	.0	---	12.0	12.0	22.0	28.0	22.0	18.0
13	7.0	6.0	.0	.0	.0	---	15.0	11.0	22.0	26.0	24.0	19.0
14	9.0	4.0	.0	.0	1.0	---	8.0	11.0	22.0	28.0	22.0	19.0
15	10.0	3.0	.0	.0	2.0	---	9.0	14.0	19.0	27.0	23.0	17.0
16	11.0	3.0	.0	.0	1.0	---	11.0	16.0	19.0	24.0	22.0	14.0
17	8.0	3.0	1.0	.0	2.0	---	12.0	15.0	20.0	26.0	19.0	11.0
18	7.0	.0	1.0	.0	1.0	---	13.0	12.0	19.0	26.0	20.0	11.0
19	5.0	1.0	.0	.0	1.0	---	14.0	12.0	18.0	22.0	20.0	13.0
20	7.0	2.0	.0	.0	1.0	---	11.0	14.0	19.0	24.0	20.0	15.0
21	8.0	2.0	.0	.0	2.0	---	10.0	16.0	20.0	25.0	21.0	17.0
22	7.0	3.0	.0	1.0	2.0	---	12.0	17.0	20.0	24.0	21.0	16.0
23	8.0	4.0	1.0	.0	1.0	---	11.0	19.0	20.0	23.0	22.0	15.0
24	7.0	1.0	1.0	.0	2.0	---	10.0	16.0	23.0	24.0	20.0	17.0
25	6.0	.0	.0	1.0	3.0	---	13.0	16.0	22.0	23.0	21.0	19.0
26	4.0	.0	1.0	2.0	4.0	8.0	16.0	18.0	22.0	21.0	21.0	19.0
27	3.0	.0	1.0	2.0	4.0	7.0	18.0	18.0	26.0	19.0	21.0	15.0
28	2.0	.0	1.0	1.0	4.0	13.0	16.0	20.0	24.0	19.0	19.0	12.0
29	2.0	3.0	.0	.0	---	12.0	15.0	20.0	23.0	18.0	19.0	15.0
30	3.0	2.0	1.0	.0	---	10.0	14.0	18.0	27.0	20.0	21.0	17.0
31	4.0	---	2.0	.0	---	12.0	---	19.0	---	21.0	21.0	---
MEAN	8.0	4.0	.5	.5	1.0	6.5	12.0	15.0	21.0	24.0	22.0	16.5

BEST DOCUMENT AVAILABLE

06486000 MISSOURI RIVER AT SIOUX CITY, IA
(National stream-quality accounting network station)

LOCATION.--Lat 42°29'09", long 96°24'49", in NW¼SE¼ sec.16, T.29 N., R.9 E., sixth principal meridian, Dakota County, NE, Hydrologic Unit 10230001, on right bank on upstream side of bridge on U.S. Highway 20 and 77 at South Sioux City, NE, 1.9 mi (3.1 km) downstream from Big Sioux River, and at mile 732.3 (1,178.3 km). Prior to Jan. 31, 1981, at site 227 ft (69 m) downstream.

DRAINAGE AREA.--314,600 mi² (814,800 km²), approximately.

PERIOD OF RECORD.--October 1897 to current year in reports of Geological Survey. Prior to October 1928 and October 19[illegible] to September 1938, monthly discharges only, published in WSP 1310. January 1879 to December 1890 (monthly discharges only) in House Document 238, 73rd Congress, 2d session, Missouri River. Gage-height records collected in this vicinity September 1878 to December 1899 are contained in reports of Missouri River Commission and since July 1889 are contained in reports of U.S. Weather Bureau.

REVISED RECORDS.--WSP 716: 1929-30. WSP 876: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 1,056.98 ft (322.168 m) National Geodetic Vertical Datum of 1929. Sept. 2, 1878, to Dec. 31, 1905, nonrecording gages at various locations within 1.7 mi (2.7 km) of present site and at various datums. Jan. 1, 1906, to Feb. 14, 1935, nonrecording gage, and Feb. 15, 1935, to Sept. 30, 1969, water-stage recorder at site 227 ft (69 m) downstream at datum 19.98 ft (6.090 m) higher, and Oct. 1, 1969, to Sept. 30, 1970, at datum 20.00 ft (6.096 m) higher. Oct. 1, 1970, to Jan. 30, 1981, water-stage recorder at site 227 ft (69 m) downstream at present datum.

REMARKS.--Records good. Flow regulated by upstream main-stem reservoirs. National Weather Service gage-height telemeter at station.

AVERAGE DISCHARGE.--84 years, 32,030 ft³/s (907.1 m³/s), 23,210,000 acre-ft/yr (28,600 hm³/yr).

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 441,000 ft³/s (12,500 m³/s) Apr. 14, 1952, gage height, 24.28 ft (7.401 m), datum then in use; minimum, 2,500 ft³/s (70.8 m³/s) Dec. 29, 1941; minimum gage height, 9.00 ft (2.743 m) Jan. 8, 1980, based on gage readings at site 14 mi (22.5 km) downstream.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 40,900 ft³/s (1,160 m³/s) June 14, gage height, 20.97 ft (6.392 m); minimum daily, 11,000 ft³/s (312 m³/s) Feb. 2; minimum gage height observed, 9.55 ft (2.911 m) Feb. 2.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981
MEAN VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	38300	37300	20900	17300	15300	15300	34600	34000	30600	32700	31400	31800
2	38100	38400	19400	16400	11000	15400	33100	34200	32100	32400	31400	31900
3	37800	38500	18500	15900	11500	15500	33200	35200	32400	33700	31700	32100
4	37700	38300	18700	15500	14800	15500	33500	35600	32100	34100	32500	32200
5	37600	38200	18400	15000	16200	15500	33400	34600	31700	33200	31900	32300
6	37900	38400	18400	16400	17200	15500	33100	33800	31600	32000	31600	32200
7	37900	38600	18200	16400	17800	15500	33500	33600	31700	31300	31100	32500
8	37700	38300	17900	15700	15400	15400	33600	33600	31900	31200	31000	31900
9	37300	38100	17800	17600	11500	15400	33500	33800	32000	31100	30900	31700
10	37100	37600	17800	16000	13400	15500	33500	33900	32800	31300	30800	32000
11	37100	37600	17800	15800	13500	15500	34200	33600	33100	31700	30800	32300
12	36700	38400	18800	16500	12800	15600	34600	34500	33500	32100	31000	32700
13	36800	38700	18400	17200	14900	15500	34800	34500	33900	32500	31400	32900
14	37100	40200	18000	16400	17100	13400	34600	33700	36700	33000	32300	32800
15	36900	40100	18100	16000	16900	14500	34400	33400	36300	33000	32400	32700
16	37500	40200	18200	15200	16900	15200	33300	33100	30600	33400	32100	33200
17	37700	40300	18200	14500	17800	15400	33400	33300	31500	33500	32000	33600
18	37200	40500	17400	16000	19000	17100	33300	33600	29200	33900	32200	34200
19	37000	40400	16300	15500	18600	19800	33400	33300	28700	34600	32400	34400
20	37000	40300	15000	14900	15500	22500	33500	32600	29600	34500	32400	34300
21	37100	40000	15500	15200	15400	25100	33400	31200	30100	33900	32400	34400
22	37200	40200	16500	14600	15400	28300	33100	30600	30300	33900	32300	34400
23	37000	40400	18300	14600	15200	31300	33200	30600	30600	33900	32600	34200
24	36800	40100	17600	14700	15000	34200	33400	30200	31200	33800	32600	34300
25	36500	38400	16200	14800	15000	34600	33600	29900	31700	33100	32600	34600
26	36500	35200	17600	15000	15100	34300	33600	29800	31800	32800	32500	34400
27	37100	32600	18500	14800	15300	34300	33600	29900	32000	32500	32500	33800
28	37200	29800	18700	14800	15400	35500	33600	30400	32800	31800	32000	33500
29	36800	27200	18100	14900	---	37000	33500	30700	34000	31100	31400	33400
30	36700	23900	17900	14600	---	36200	33900	30800	33000	30900	31300	34000
31	37000	---	17900	15000	---	36100	---	30800	---	30700	31800	---
TOTAL	1158300	1126200	555000	485200	428900	685900	1010200	1012700	963700	1013600	987300	994700
MEAN	37240	37540	17900	15650	15320	22130	33670	32670	32120	32700	31850	33160
MAX	38300	40500	20900	18400	19000	37000	34800	35600	36700	34600	32600	34600
MIN	36500	23900	15000	14500	11000	13400	33100	29800	28700	30700	30800	31700
AC-FT	2298000	2234000	1101000	962400	850700	1360000	2004000	2009000	1911000	2010000	1958000	1973000

CAL YR 1980 TOTAL 11054000 MEAN 30200 MAX 42000 MIN 13800 AC-FT 21930000
WTR YR 1981 TOTAL 10417700 MEAN 28540 MAX 40500 MIN 11000 AC-FT 20660000

The following miscellaneous discharge measurements and observations of no flow were made in the Black Hills irrigation area and James River basin. Stations are listed by latitude beginning with furthest south site.

432936103182201 - BEAVER CR BELOW DIVERSION DITCH (LAT 43 29 36 LONG 103 18 22)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
AUG , 1962		AUG , 1963	
08...	8.1	26...	4.1
16...	1.3	SEP	
31...	1.2	09...	4.2
SEP		24...	10
07...	4.1	OCT	
13...	1.4	09...	4.2
28...	10	22...	.89
OCT		NOV	
05...	11	18...	9.0
12...	10	DEC	
16...	8.9	03...	5.2
26...	9.3	MAY , 1964	
NOV		06...	5.0
01...	9.5	20...	3.6
14...	9.0	JUN	
26...	9.7	03...	6.8
DEC		18...	12
06...	10	JUL	
MAY , 1963		01...	6.0
15...	1.7	15...	3.1
24...	7.8	29...	2.7
JUN		AUG	
04...	9.1	19...	3.2
17...	11	25...	3.2
JUL		SEP	
02...	9.6	22...	2.5
18...	10	OCT	
AUG		13...	4.1
01...	9.7		
12...	2.0		

432936103182201 - BEAVER CR BELOW DIVERSION DITCH (LAT 43 29 36 LONG 103 18 22)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1964		AUG , 1965	
28...	4.5	19...	2.7
MAY , 1965		30...	3.3
13...	4.0	SEP	
JUN		01...	4.8
23...	9.9	15...	3.8
JUL		17...	9.0
05...	5.9	27...	9.6
13...	10	OCT	
19...	3.2	13...	3.9
22...	3.0	14...	11
AUG		25...	11
03...	5.6	27...	7.4
05...	4.1		
10...	3.5		

432938103182101 - BEAVER CR DIVERSION DITCH (LAT 43 29 38 LONG 103 18 21)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
AUG , 1962	
08...	.78
16...	8.4
31...	8.8
SEP	
07...	4.7
13...	8.6
28...	E.10
OCT	
05...	E.06
12...	E.06
18...	E.02
26...	E.03
NOV	
14...	E.05
DEC	
06...	E.02
MAY , 1963	
16...	7.7
24...	1.2
JUN	
04...	.21
17...	.00
JUL	
02...	.00
16...	.00
AUG	
12...	7.9
26...	5.8
SEP	
09...	5.3
SEP , 1963	
24...	E.02
OCT	
09...	5.3
22...	8.4
MAY , 1964	
06...	5.9
28...	7.0
JUN	
03...	3.8
18...	E.02
JUL	
01...	5.1
15...	7.3
29...	7.4
AUG	
19...	7.2
25...	6.4
SEP	
22...	7.0
OCT	
13...	6.0
28...	6.7
MAY , 1965	
13...	6.3
JUN	
23...	.00
JUL	
13...	.40
22...	7.7

432938103182101 - BEAVER CR DIVERSION DITCH (LAT 43 29 38 LONG 103 18 21)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
AUG , 1965	
05...	5.8
19...	6.5
SEP	
01...	5.8
16...	E.10
OCT	
14...	.00
25...	.00
JUL , 1966	
05...	8.0
19...	7.3
AUG , 1966	
03...	4.4
18...	6.7
30...	6.6
SEP	
19...	6.6
27...	E.01
OCT	
13...	6.4
27...	2.8

433045103194801 - BEAVER CR ABOVE BUFFALO GAP SD (LAT 43 30 45 LONG 103 19 48)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
AUG , 1962	
08...	8.1
16...	1.2
31...	2.1
SEP	
07...	5.5
13...	2.1
28...	11
OCT	
05...	11
12...	10
18...	9.9
26...	11
NOV	
01...	10
14...	9.6
26...	9.3
DEC	
06...	9.6
MAY , 1963	
15...	2.0
24...	8.0
JUN	
04...	8.9
17...	11
JUL	
02...	9.7
16...	9.3
AUG	
01...	9.9
12...	3.1
AUG , 1963	
27...	6.2
SEP	
09...	5.1
24...	10
OCT	
09...	4.6
22...	1.6
NOV	
18...	8.5
DEC	
03...	9.4
MAY , 1964	
06...	6.5
20...	3.9
JUN	
03...	6.0
18...	11
JUL	
01...	6.7
15...	4.0
29...	5.2
AUG	
19...	3.8
25...	3.2
SEP	
22...	3.1
OCT	
13...	4.7

E Estimated.

433045103194401 - BEAVER CR ABOVE BUFFALO GAP SD (LAT 43 30 45 LONG 103 19 44)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1964		OCT , 1965	
28...	4.8	25...	10
MAY , 1965		JUL , 1966	
13...	8.9	05...	6.3
JUN		19...	3.7
23...	9.2	AUG	
JUL		03...	5.3
13...	9.8	18...	4.0
22...	3.5	30...	4.0
AUG		SEP	
05...	4.6	15...	5.1
19...	4.5	27...	9.8
SEP		OCT	
01...	6.8	13...	4.2
17...	9.9	27...	7.9
OCT			
14...	11		

433130103262001 - BEAVER CR AT HEADWATERS NR HOT SPRINGS SD (LAT 43 31 30 LONG 103 26 20)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
AUG , 1963		SEP , 1963	
01...	9.0	09...	8.2
12...	8.8		
26...	9.0		

435840097593001 - JAMES RIVER BELOW FORESTBURG SD (LAT 43 58 40 LONG 097 59 30)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1952		JAN , 1953	
03...	4.8	30...	6.3
DEC		FEB	
05...	8.3	25...	4.5

435707098003201 - JIM CR NEAR FORESTBURG SD (LAT 43 57 07 LONG 098 00 32)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1952		JAN , 1953	
03...	E.02	30...	.00
DEC		FEB	
05...	.00	25...	.00

435740103241601 - SPRING CR ABOVE SHERIDAN LK NR HILL CITY SD (LAT 43 57 40 LONG 103 24 16)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
APR , 1969		JUN , 1969	
16...	7.7	19...	4.4
MAY		30...	5.8
13...	5.7		

435855103205201 - SPRING CR AT STRATO BOWL NR ROCKERVILLE SD (LAT 43 58 55 LONG 103 20 52)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
APR , 1969	
17...	53

435904103253601 - SPRING CR AT ROADSIDE PARK ON SHERIDAN LK ROAD (LAT 43 59 04 LONG 103 25 36)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
APR , 1969	
17...	51

435955098060001 - LONG LAKE OUTLET NR FORESTBURG SD (LAT 43 59 55 LONG 098 06 00)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1952		JAN , 1953	
03...	E.01	30...	.00
DEC		FEB	
05...	.00	25...	.00

440158098063901 - SAND CR AT FORESTBURG SD (LAT 44 01 58 LONG 098 06 39)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1952		JAN , 1953	
03...	.04	30...	.00
DEC		FEB	
03...	.59	24...	.00

E Estimated.

MISCELLANEOUS DISCHARGE MEASUREMENTS

```
                 STREAM-                        STREAM-
                  FLOW,                          FLOW,
                 INSTAN-                        INSTAN-
                 TANEOUS                        TANEOUS
        DATE      (CFS)              DATE        (CFS)
                 (00061)                        (00061)


440330103180001 - CLEGHORN SPRINGS NR RAPID CITY SD (LAT 44 03 30 LONG 103 18 00)

        AUG , 1947                   OCT , 1947
         12...     7.8                21...     9.6

  440336098030601 - REDSTONE CR NEAR FORESTBURG SD (LAT 44 03 55 LONG 098 03 15)

        OCT , 1952                   JAN , 1953
         03...      .00               30...      .00
        DEC                          FEB
         05...      .00               25...      .00

440609098030501 - RIFLE LAKE OUTLET NEAR FORESTBURG SD (LAT 44 06 09 LONG 098 03 05)

        OCT , 1952                   JAN , 1953
         03...      .00               30...      .00
        DEC                          FEB
         05...      .00               25...      .00

440639103014701 - BOX ELDER CR TRIB NR BOX ELDER SD (LAT 44 06 39 LONG 103 01 47)

        FEB , 1955                   APR , 1956
         16...     3.2                05...     2.4
        MAR                          MAY
         02...     2.1                22...      .63
         16...     1.3               JUN
        APR                           22...      .03
         13...     2.2               AUG
        MAY                           01...      .40
         25...      .80              SEP
        JUL                           05...     1.1
         01...      .69              JUL , 1957
        SEP                           10...     1.3
         15...      .80
        NOV
         07...      .65

  440728098053001 - JAMES RIVER ABOVE FORESTBURG SD (LAT 44 07 28 LONG 098 05 30)

        OCT , 1952                   JAN , 1953
         03...     4.8                30...     6.6
        DEC                          FEB
         04...     6.3                25...     3.4

   441449098082401 - JAMES RIVER BELOW PEARL CREEK (LAT 44 14 49 LONG 098 08 24)

        JAN , 1952                   DEC , 1952
         30...     5.6                04...     6.0
        OCT                          JAN , 1953
         03...    33                  30...     5.6

      441457098075601 - PEARL CR NEAR HURON SD (LAT 44 14 57 LONG 098 07 56)

        OCT , 1952                   JAN , 1953
         03...     1.4                30...     1.3
        DEC                          FEB
         04...     2.0                26...      .00

      441558098102801 - CAIN CR NEAR HURON SD (LAT 44 15 58 LONG 098 10 28)

        OCT , 1952                   JAN , 1953
         03...      .63               29...      .70
        DEC                          FEB
         04...      .60               26...      .60

  441840098114301 - STONY RUN LK OUTLET NR HURON SD (LAT 44 18 40 LONG 098 11 43)

        OCT , 1952                   JAN , 1953
         03...      .00               29...      .00
        DEC
         04...      .00
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442350098125001 - UNNAMED CR ABOVE RAVINE PARK LK NR HURON SD (LAT 44 23 50 LONG 098 12 50)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1952		JAN , 1953	
03...	.00	29...	E.05
DEC		FEB	
04...	.00	26...	E.05

442643098053401 - SHUE CR NEAR HURON SD (LAT 44 26 43 LONG 098 05 34)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1952		JAN , 1953	
02...	.00	29...	.00
DEC		FEB	
04...	.00	27...	.00

443120103521001 - COOK DITCH NEAR SPEARFISH SD (LAT 44 31 20 LONG 103 52 10)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1961		OCT , 1961	
01...	14	02...	3.0
08...	7.9	09...	2.6
15...	3.0	16...	2.3
22...	8.1	23...	3.1
29...	2.8	NOV	
JUN		27...	.08
05...	.99	APR , 1962	
12...	4.2	30...	10
19...	2.2	MAY	
26...	.32	07...	4.4
JUL		14...	1.4
03...	.04	JUN	
10...	1.5	10...	E.25
17...	.99	JUL	
24...	1.9	23...	.21
31...	4.0	30...	.16
AUG		AUG	
07...	1.0	06...	E.50
14...	1.3	13...	2.2
21...	.04	20...	4.5
28...	.05	27...	2.6
SEP		SEP	
04...	1.8	03...	3.1
11...	1.5	10...	2.1
18...	3.2	24...	E.03
25...	2.9		

443120103521001 - COOK DITCH NEAR SPEARFISH SD (LAT 44 31 20 LONG 103 52 10)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1962		SEP , 1963	
01...	E.05	02...	13
08...	E.50	09...	2.3
15...	4.8	16...	2.3
24...	2.7	23...	2.2
MAY , 1963		30...	1.6
07...	E.02	OCT	
14...	E.05	07...	.74
20...	E.05	14...	E.40
27...	E.02	21...	1.4
JUN		28...	1.8
03...	E.02	MAY , 1964	
10...	E.25	04...	E.60
17...	E.10	11...	E.70
24...	.00	18...	8.5
JUL		25...	16
01...	.00	JUN	
08...	2.2	01...	10
15...	2.5	08...	10
22...	7.6	15...	.00
29...	6.6	22...	.00
AUG		29...	E.20
05...	6.1	JUL	
12...	6.6	06...	E.11
19...	8.2		
26...	9.0		

E Estimated.

443120103521001 - COOK DITCH NEAR SPEARFISH SD (LAT 44 31 20 LONG 103 52 10)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
JUL , 1964		SEP , 1964	
13...	1.5	08...	3.5
20...	6.8	14...	3.3
27...	9.7	21...	E.10
AUG		28...	4.8
03...	13	OCT	
10...	10	05...	5.9
17...	18	12...	5.6
24...	E.25	19...	4.1
31...	E.85	26...	E.65

443125103520801 - SPEARFISH CR BELOW COOK DITCH (LAT 44 31 25 LONG 103 52 08)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1961		OCT , 1961	
01...	5.1	02...	.00
08...	.37	09...	.00
15...	E.10	16...	.00
22...	.18	23...	.00
29...	.00	NOV	
JUN		27...	20
05...	.00	APR , 1962	
12...	.00	30...	13
19...	.00	MAY	
26...	.00	07...	.00
JUL		14...	.00
03...	.00	JUL	
10...	.00	23...	13
17...	.00	30...	16
24...	.00	AUG	
31...	.00	06...	12
AUG		13...	5.5
07...	.00	20...	2.7
14...	.00	27...	2.6
21...	.00	SEP	
28...	.00	03...	2.6
SEP		10...	E.60
04...	.00	17...	E.60
11...	.00	24...	13
18...	.00		
25...	.00		

443125103520801 - SPEARFISH CR BELOW COOK DITCH (LAT 44 31 25 LONG 103 52 08)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1962		SEP , 1963	
01...	27	16...	16
08...	25	23...	26
15...	18	30...	20
22...	15	OCT	
MAY , 1963		07...	24
13...	110	14...	24
20...	66	21...	28
27...	51	28...	25
JUN		MAY , 1964	
03...	62	04...	71
10...	68	11...	110
24...	86	18...	85
JUL		25...	27
01...	58	JUN	
08...	31	01...	22
15...	31	08...	20
22...	16	JUL	
29...	17	06...	.00
AUG		13...	50
05...	9.9	20...	19
12...	10	27...	9.2
19...	2.7	AUG	
26...	5.6	03...	5.7
SEP		10...	5.3
02...	13		
09...	18		

E Estimated.

443125103520801 - SPEARFISH CR BELOW COOK DITCH (LAT 44 31 25 LONG 103 52 08)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
AUG , 1964		SEP , 1964	
17...	7.4	28...	28
24...	42	OCT	
31...	36	05...	39
SEP		12...	31
07...	39	19...	35
14...	35	26...	47
21...	40		

443235103523501 - HIGGINS GULCH CR NR SPEARFISH SD (LAT 44 32 35 LONG 103 52 35)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1961		OCT , 1961	
02...	3.7	17...	3.7
09...	3.1	24...	3.8
16...	3.2	NOV	
23...	3.2	27...	3.6
30...	3.1	APR , 1962	
JUN		30...	4.1
06...	2.9	MAY	
13...	3.0	08...	4.5
20...	3.6	15...	3.3
27...	3.3	JUL	
JUL		24...	4.2
04...	3.3	31...	3.8
11...	3.7	AUG	
18...	3.3	07...	4.1
25...	3.3	14...	4.4
AUG		21...	4.6
01...	3.0	28...	4.7
08...	3.4	SEP	
15...	3.1	04...	5.1
22...	2.9	11...	5.3
29...	3.2	18...	4.6
SEP		25...	4.7
05...	2.9	OCT	
12...	4.1	02...	4.7
26...	3.1		
OCT			
03...	2.9		
10...	3.1		

443235103523501 - HIGGINS GULCH CR NR SPEARFISH SD (LAT 44 32 35 LONG 103 52 35)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1962		SEP , 1963	
09...	5.0	17...	5.7
16...	4.7	24...	7.6
23...	5.1	OCT	
MAY , 1963		22...	6.3
07...	3.9	29...	6.2
14...	4.1	MAY , 1964	
21...	4.4	05...	4.3
28...	4.6	12...	4.1
JUN		19...	4.2
04...	5.6	26...	5.4
11...	6.5	JUN	
18...	4.4	02...	4.4
25...	4.1	30...	5.7
JUL		JUL	
02...	3.5	07...	4.4
09...	3.4	14...	5.8
16...	4.0	21...	5.9
23...	4.0	28...	6.3
30...	4.3	AUG	
AUG		04...	8.3
06...	4.1	11...	7.8
13...	4.8	18...	9.0
20...	4.3	25...	8.6
27...	6.7		
SEP			
03...	9.7		
10...	7.7		

443235103523501 - HIGGINS GULCH CR NR SPEARFISH SD (LAT 44 32 35 LONG 103 52 35)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1964		OCT , 1964	
01...	8.3	06...	10
08...	8.9	13...	9.2
15...	8.8	20...	9.6
22...	9.4	27...	7.4
29...	11		

443254103582001 - CHICKEN CR NR SPEARFISH SD (LAT 44 32 54 LONG 103 58 20)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
JUN , 1954		OCT , 1955	
15...	.36	18...	.29
JUN , 1955		JUN , 1956	
24...	.13	29...	E.10
SEP		AUG	
01...	.13	01...	.09

443320103525501 - HIGGINS GULCH CR AT MOUTH (LAT 44 33 20 LONG 103 52 55)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
MAR , 1961		OCT , 1961	
28...	3.4	03...	3.6
MAY		10...	3.2
02...	2.8	17...	1.6
09...	2.4	24...	1.9
16...	1.8	NOV	
23...	1.8	27...	4.4
30...	1.5	APR , 1962	
JUN		30...	4.7
06...	1.8	MAY	
13...	.96	08...	1.5
20...	1.1	15...	1.9
27...	.94	JUL	
JUL		24...	4.5
04...	1.1	31...	4.6
11...	1.3	AUG	
18...	1.3	07...	4.3
25...	1.3	14...	5.0
AUG		21...	5.6
01...	2.2	28...	4.6
08...	1.6	SEP	
15...	1.8	04...	6.5
22...	1.8	11...	5.8
29...	1.2	18...	5.4
SEP		25...	6.6
05...	1.3		
12...	1.6		
26...	8.0		

443320103525501 - HIGGINS GULCH CR AT MOUTH (LAT 44 33 20 LONG 103 52 55)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1962		AUG , 1963	
02...	5.3	27...	5.0
09...	6.1	SEP	
16...	5.7	03...	9.0
23...	6.7	10...	7.0
DEC		17...	7.6
11...	6.1	24...	9.5
MAY , 1963		OCT	
07...	4.4	01...	8.6
14...	4.4	08...	7.9
21...	4.9	15...	6.8
28...	5.9	22...	6.0
JUN		29...	7.0
04...	6.4	MAY , 1964	
11...	7.3	05...	3.8
18...	5.2	12...	3.8
24...	5.1	19...	3.8
JUL		26...	4.5
03...	4.8	JUN	
09...	4.6	02...	3.3
16...	4.6	30...	4.7
20...	3.7	JUL	
23...	2.9	07...	5.7
AUG		14...	6.2
06...	3.8	21...	5.4
13...	2.8		
20...	2.7		

E Estimated.

443320103525501 - HIGGINS GULCH CR AT MOUTH (LAT 44 33 20 LONG 103 52 55)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
JUL , 1964		SEP , 1964	
26...	8.0	15...	8.9
AUG		22...	11
04...	8.6	29...	10
11...	8.7	OCT	
18...	7.5	06...	12
25...	10	13...	11
SEP		20...	10
01...	9.6	27...	7.8
08...	7.5		

443335104010201 - MURRAY LAKE OUTLET NR BELLE FOURCHE SD (LAT 44 33 35 LONG 104 01 02)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
JUL , 1961		OCT , 1961	
07...	1.8	03...	1.0

443357103593801 - COX LAKE OUTLET NR BELLE FOURCHE SD (LAT 44 33 57 LONG 103 59 38)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
JUL , 1961		OCT , 1961	
07...	5.4	03...	5.6

443400103563001 - CHICKEN CR NR SPEARFISH SD (LAT 44 34 00 LONG 103 56 30)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
MAR , 1961		OCT , 1961	
28...	.80	04...	.52
MAY		11...	.65
03...	.95	18...	.78
10...	.93	25...	.56
17...	1.0	NOV	
24...	1.0	28...	.78
31...	.67	MAY , 1962	
JUN		02...	.88
07...	.54	09...	1.5
14...	.82	16...	1.1
21...	.46	JUL	
28...	.21	25...	1.0
JUL		31...	1.3
05...	.10	AUG	
12...	.50	07...	.95
26...	.09	14...	E.40
AUG		21...	E.50
02...	.87	28...	E.50
09...	.59	SEP	
16...	.80	04...	E.40
23...	.51	11...	E.70
30...	.37	18...	E.20
SEP		25...	E.80
06...	.44	OCT	
20...	.65	02...	E.70
27...	.66		

443400103563001 - CHICKEN CR NR SPEARFISH SD (LAT 44 34 00 LONG 103 56 30)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1962		SEP , 1963	
09...	E.60	04...	E.90
16...	E.50	11...	E.90
24...	.56	18...	E.50
DEC		25...	E.70
11...	.68	OCT	
MAY , 1963		02...	E.90
08...	1.3	09...	E.50
15...	1.4	16...	E.80
22...	1.2	23...	1.1
28...	1.3	30...	.97
JUN		MAY , 1964	
05...	1.2	05...	1.5
12...	1.3	13...	1.8
19...	1.3	20...	1.6
26...	1.2	27...	1.0
JUL		JUN	
03...	1.1	03...	.99
10...	1.2	JUL	
17...	1.2	01...	2.0
24...	.98	08...	1.6
31...	.94	15...	1.4
AUG		22...	1.2
14...	1.3	29...	1.2
21...	E.90	AUG	
28...	.99	05...	1.2

E Estimated.

443400103563001 - CHICKEN CR NR SPEARFISH SD (LAT 44 34 00 LONG 103 56 30)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
AUG , 1964		SEP , 1964	
12...	1.1	30...	1.2
19...	1.0	OCT	
26...	E1.5	07...	E1.0
SEP		14...	E1.0
02...	1.4	21...	E1.0
09...	E.90	28...	E1.0
16...	E.90		
23...	E1.0		

443427104001501 - CROW CR AT MOUTH NEAR BELLE FOURCHE SD (LAT 44 34 27 LONG 104 00 15)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
MAR , 1961		OCT , 1961	
28...	30	04...	29
MAY		11...	31
03...	32	18...	36
10...	29	25...	33
17...	28	NOV	
24...	29	28...	28
31...	32	MAY , 1962	
JUN		02...	29
04...	29	09...	36
07...	27	16...	31
21...	26	JUL	
28...	28	25...	33
JUL		AUG	
05...	30	01...	33
12...	27	08...	32
26...	28	15...	31
AUG		22...	31
02...	28	29...	30
09...	31	SEP	
16...	28	05...	31
23...	27	12...	31
30...	27	26...	29
SEP		OCT	
06...	27	03...	31
20...	32	10...	33
27...	31		

443427104001501 - CROW CR AT MOUTH NEAR BELLE FOURCHE SD (LAT 44 34 27 LONG 104 00 15)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1962		SEP , 1963	
17...	31	18...	40
24...	41	25...	38
DEC		OCT	
12...	35	02...	35
MAY , 1963		09...	35
08...	42	16...	33
15...	44	23...	38
22...	40	30...	35
29...	35	MAY , 1964	
JUN		20...	42
12...	51	27...	39
19...	46	JUN	
26...	46	03...	31
JUL		JUL	
03...	33	08...	41
10...	34	15...	38
17...	35	22...	34
24...	31	29...	31
31...	30	AUG	
AUG		05...	61
07...	31	12...	34
14...	29	19...	35
21...	28	26...	35
28...	31	SEP	
SEP		02...	31
04...	31		
11...	33		

443427104001501 - CROW CR AT MOUTH NEAR BELLE FOURCHE SD (LAT 44 34 27 LONG 104 00 15)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1964		OCT , 1964	
09...	33	14...	33
16...	37	21...	35
23...	37	28...	35
30...	36		

E Estimated.

BEST DOCUMENT AVAILABLE

443429104002301 - REDWATER CR ABOVE CROW CR (LAT 44 34 29 LONG 104 00 23)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
MAY , 1961		OCT , 1961	
03...	16	11...	19
10...	9.2	18...	15
17...	5.5	25...	17
24...	5.6	NOV	
31...	2.5	28...	25
JUN		MAY , 1962	
07...	2.7	02...	19
14...	3.4	09...	1.9
21...	2.5	16...	2.3
28...	2.6	JUL	
JUL		25...	23
05...	7.6	AUG	
12...	3.6	01...	23
26...	2.9	08...	20
AUG		15...	12
02...	6.1	22...	12
09...	5.8	29...	10
16...	3.9	SEP	
23...	3.9	05...	13
30...	3.9	12...	21
SEP		19...	15
06...	5.6	26...	21
20...	23	OCT	
27...	17	03...	28
OCT		10...	27
04...	17		

443429104002301 - REDWATER CR ABOVE CROW CR (LAT 44 34 29 LONG 104 00 23)--Continued

OCT , 1962		SEP , 1963	
17...	26	11...	13
24...	31	18...	20
DEC		25...	17
11...	34	OCT	
MAY , 1963		02...	14
15...	35	09...	13
22...	30	16...	19
29...	41	23...	21
JUN		30...	31
05...	36	MAY , 1964	
12...	59	06...	40
19...	69	20...	36
26...	36	27...	22
JUL		JUN	
03...	31	03...	16
10...	20	JUL	
17...	16	01...	73
24...	5.3	08...	40
31...	19	15...	41
AUG		22...	28
07...	9.2	29...	30
14...	5.7	AUG	
21...	5.0	05...	4.3
28...	32	12...	5.1
SEP		19...	5.3
04...	25		

443429104002301 - REDWATER CR ABOVE CROW CR (LAT 44 34 29 LONG 104 00 23)--Continued

AUG , 1964		OCT , 1964	
26...	15	07...	25
SEP		14...	23
02...	23	21...	28
09...	21	28...	28
16...	22		
23...	22		
30...	23		

443437103583801 - LAKE CR NR SPEARFISH SD (LAT 44 34 37 LONG 103 58 38)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
MAR , 1961		OCT , 1961	
28...	5.5	04...	4.7
MAY		11...	5.5
03...	5.2	18...	4.9
10...	4.0	25...	5.1
17...	5.0	NOV	
24...	4.5	28...	5.7
31...	4.7	MAY , 1962	
JUN		02...	4.7
07...	4.7	09...	5.5
14...	6.2	16...	5.3
21...	4.5	JUL	
26...	5.1	25...	5.7
JUL		31...	6.0
05...	4.3	AUG	
12...	4.1	07...	5.1
26...	4.3	14...	5.4
AUG		21...	4.6
02...	4.8	28...	4.9
09...	4.7	SEP	
16...	4.7	04...	5.4
23...	5.5	11...	5.2
30...	4.3	18...	5.2
SEP		25...	5.2
06...	4.3	OCT	
20...	5.1	02...	5.6
27...	5.0		

443437103583801 - LAKE CR NR SPEARFISH SD (LAT 44 34 37 LONG 103 58 38)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1962		SEP , 1963	
09...	5.7	04...	5.6
16...	5.3	11...	5.2
24...	5.6	18...	5.1
DEC		25...	5.0
11...	5.6	OCT	
MAY , 1963		02...	5.8
08...	5.2	09...	4.9
15...	5.1	16...	5.2
22...	5.2	23...	4.5
28...	5.1	30...	5.6
JUN		MAY , 1964	
05...	5.4	06...	6.4
12...	5.7	13...	5.5
19...	5.4	20...	5.5
26...	5.2	27...	5.2
JUL		JUN	
03...	4.9	03...	5.0
10...	5.1	JUL	
17...	4.9	01...	6.8
24...	5.1	08...	5.3
31...	4.6	13...	5.1
AUG		22...	5.9
07...	5.0	29...	5.1
14...	4.9		
21...	4.8		
28...	5.0		

443437103583801 - LAKE CR NR SPEARFISH SD (LAT 44 34 37 LONG 103 58 38)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
AUG , 1964		SEP , 1964	
05...	5.1	23...	5.0
12...	5.0	30...	5.3
19...	4.7	OCT	
26...	4.8	07...	5.0
SEP		14...	5.2
02...	5.0	21...	5.5
09...	5.0	28...	4.7
16...	5.0		

443445104013001 - THOMPSON DITCH BELOW DIVERSION DAM (LAT 44 34 45 LONG 104 01 30)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1960		SEP , 1961	
31...	7.2	06...	7.3
JUN		13...	9.9
13...	7.9	20...	6.6
21...	7.0	27...	5.8
27...	12	OCT	
MAY , 1961		04...	5.0
03...	.10	11...	5.4
10...	8.6	18...	7.1
17...	7.2	25...	7.0
24...	6.7	NOV	
31...	6.5	28...	.00
JUN		MAY , 1962	
07...	6.9	02...	.00
14...	7.3	09...	10
21...	6.7	16...	11
28...	7.8	JUL	
JUL		25...	13
05...	15	AUG	
12...	6.6	01...	13
26...	6.8	08...	11
AUG		15...	6.9
02...	9.4	22...	6.5
09...	6.7	29...	7.0
16...	9.8	SEP	
23...	7.5	05...	7.4
30...	8.0		

443445104013001 - THOMPSON DITCH BELOW DIVERSION DAM (LAT 44 34 45 LONG 104 01 30)--Continued

SEP , 1962		AUG , 1963	
12...	9.0	21...	13
19...	6.3	28...	.00
26...	7.3	SEP	
OCT		04...	8.2
03...	7.2	11...	6.2
10...	.00	18...	6.6
17...	.00	25...	7.1
24...	.00	OCT	
MAY , 1963		02...	7.0
08...	.00	09...	7.1
15...	9.4	16...	9.0
22...	9.2	23...	11
29...	10	30...	.00
JUN		MAY , 1964	
05...	8.4	06...	.00
12...	12	13...	.00
19...	7.4	20...	.00
26...	6.4	27...	9.2
JUL		JUN	
03...	6.3	03...	6.6
10...	7.2	JUL	
17...	12	01...	.00
24...	5.0	08...	.00
31...	2.9		
AUG			
07...	8.4		
14...	13		

443445104013001 - THOMPSON DITCH BELOW DIVERSION DAM (LAT 44 34 45 LONG 104 01 30)--Continued

JUL , 1964		SEP , 1964	
15...	.00	09...	6.3
22...	.00	16...	6.3
29...	.00	23...	5.8
AUG		30...	6.0
05...	9.8	OCT	
12...	11	07...	5.6
19...	11	14...	4.8
26...	7.3	21...	3.8
SEP		28...	4.9
02...	7.1		

443515103513001 - REDWATER CR BELOW CONCORDIA DITCH (LAT 44 35 15 LONG 103 51 30)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
MAY , 1960		MAY , 1961	
31...	E.50	18...	.07
JUN		25...	.58
13...	10	JUN	
22...	4.8	01...	.36
27...	E.80	08...	.27
JUL		15...	.20
13...	E1.0	22...	2.2
21...	1.8	29...	.49
29...	1.6	JUL	
AUG		13...	.15
04...	2.3	20...	1.1
12...	1.7	27...	2.0
16...	.50	AUG	
26...	7.9	03...	8.0
SEP		10...	4.2
01...	E.03	17...	5.9
08...	.37	24...	3.4
16...	8.2	31...	5.0
23...	15	SEP	
28...	1.6	07...	4.0
OCT		14...	7.8
06...	E.03	21...	E.02
13...	71	28...	E.01
MAY , 1961		OCT	
04...	.69	05...	2.7
11...	1.9		

443515103513001 - REDWATER CR BELOW CONCORDIA DITCH (LAT 44 35 15 LONG 103 51 30)--Continued

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1961		OCT , 1962	
12...	3.4	25...	.28
19...	2.8	MAY , 1963	
26...	2.5	16...	64
NOV		23...	15
28...	1.3	30...	17
MAY , 1962		JUN	
03...	2.3	06...	56
10...	1.7	13...	76
17...	15	27...	74
JUN		JUL	
26...	3.9	04...	11
AUG		11...	.15
02...	1.5	18...	1.6
09...	E.20	25...	.57
16...	E.60	AUG	
23...	2.4	01...	1.7
30...	E.90	08...	.32
SEP		15...	1.4
06...	E.80	22...	4.0
13...	4.8	29...	10
20...	2.9	SEP	
27...	E.90	04...	16
OCT		11...	2.8
04...	4.8	19...	E.50
10...	6.8	25...	E.05
17...	3.2		

443515103513001 - REDWATER CR BELOW CONCORDIA DITCH (LAT 44 35 15 LONG 103 51 30)--Continued

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1963		AUG , 1964	
02...	E.10	06...	2.6
09...	E.01	13...	.93
24...	9.5	20...	1.4
31...	7.0	27...	13
MAY , 1964		SEP	
07...	75	03...	3.9
20...	36	10...	8.9
28...	2.1	16...	E.80
JUN		24...	5.8
04...	5.8	OCT	
JUL		01...	2.6
09...	26	08...	4.8
16...	14	15...	3.7
23...	3.2	22...	E1.0
30...	3.6		

E Estimated.

443518103510601 - CONCORDIA DITCH NR BELLE FOURCHE SD (LAT 44 35 18 LONG 103 51 08)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1960		MAY , 1961	
31...	15	18...	.00
JUN		25...	.00
13...	12	JUN	
22...	8.6	01...	23
27...	15	08...	23
JUL		15...	18
13...	16	22...	19
21...	17	29...	21
29...	21	JUL	
AUG		06...	E.02
04...	18	13...	15
12...	17	20...	18
18...	17	27...	18
26...	9.5	AUG	
SEP		03...	14
01...	16	10...	16
08...	11	18...	14
16...	16	24...	15
23...	.09	31...	16
28...	.79	SEP	
OCT		07...	7.2
06...	9.0	14...	1.5
13...	5.8	21...	4.6
MAY , 1961		28...	3.6
04...	E.02		
11...	.00		

443518103510601 - CONCORDIA DITCH NR BELLE FOURCHE SD (LAT 44 35 18 LONG 103 51 08)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1961		OCT , 1962	
05...	5.0	17...	E1.7
12...	.24	25...	.26
19...	.28	MAY , 1963	
26...	.16	09...	E.01
NOV		16...	E.05
28...	E.02	23...	.00
MAY , 1962		30...	E.15
03...	9.8	JUN	
10...	13	06...	E.15
17...	3.2	13...	E.15
JUL		20...	E.15
26...	11	27...	E.10
AUG		JUL	
02...	9.6	04...	E.15
09...	5.1	11...	12
16...	5.3	18...	18
23...	15	25...	14
30...	6.0	AUG	
SEP		01...	19
06...	11	08...	14
13...	3.3	15...	14
20...	8.1	22...	16
27...	8.0	29...	E.50
OCT		SEP	
04...	6.0	04...	E.50
10...	1.5		

E Estimated.

443519103510801 - CONCORDIA DITCH NR BELLE FOURCHE SD (LAT 44 35 19 LONG 103 51 08)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
SEP , 1963		JUL , 1964	
11...	E.50	23...	17
19...	2.6	30...	15
25...	10	AUG	
OCT		06...	15
02...	2.9	13...	16
09...	2.5	20...	15
16...	2.4	27...	8.2
24...	2.0	SEP	
31...	1.4	03...	8.5
MAY , 1964		10...	4.0
07...	E.10	16...	13
14...	E.20	24...	3.4
20...	E.04	OCT	
28...	15	01...	3.5
JUN		08...	E1.8
04...	9.8	15...	2.2
JUL		22...	7.5
02...	E.50	28...	E.10
09...	12		
16...	21		

443520098095501 - FOSTER CR NEAR HURON SD (LAT 44 35 20 LONG 098 09 55)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
DEC , 1952		FEB , 1953	
04...	.00	26...	.00
JAN , 1953			
28...	.00		

443530103510501 - REDWATER CR BELOW THOMPSON DITCH (LAT 44 35 30 LONG 103 51 05)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1961		SEP , 1961	
03...	15	27...	15
10...	8.8	OCT	
17...	8.2	04...	14
24...	2.1	11...	16
31...	.01	18...	16
JUN		25...	14
07...	.02	NOV	
13...	12	28...	24
14...	E.05	MAY , 1962	
21...	E.02	02...	15
27...	5.0	09...	.70
28...	E.01	16...	.49
JUL		JUL	
05...	8.9	25...	22
12...	.69	AUG	
26...	.12	01...	23
AUG		08...	9.1
02...	6.3	15...	12
09...	.13	22...	12
16...	.11	29...	4.5
23...	.08	SEP	
30...	E.02	05...	13
SEP		12...	20
06...	E.02	19...	16
13...	13		
20...	15		

E Estimated.

443530103510501 - REDWATER CR BELOW THOMPSON DITCH (LAT 44 35 30 LONG 103 51 05)--Continued

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1962		SEP , 1963	
26...	24	04...	22
OCT		11...	10
03...	23	18...	12
10...	28	25...	14
17...	27	OCT	
24...	26	02...	11
MAY , 1963		09...	10
15...	37	16...	17
22...	29	23...	19
29...	35	30...	29
JUN		MAY , 1964	
05...	28	06...	38
12...	57	20...	32
19...	68	27...	20
26...	38	JUN	
JUL		03...	16
03...	34	AUG	
10...	13	05...	2.3
17...	12	12...	1.9
24...	3.1	19...	1.4
30...	15	26...	11
AUG		SEP	
07...	6.3	02...	20
14...	2.4	09...	18
21...	1.9		
28...	31		

443530103510501 - REDWATER CR BELOW THOMPSON DITCH (LAT 44 35 30 LONG 103 51 05)--Continued

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1964		OCT , 1964	
16...	20	21...	23
23...	19	28...	23
30...	19		
OCT			
07...	22		
14...	19		

443532103510601 - REDWATER CR BELOW LOWER POWER PLANT NO. 2 (LAT 44 35 32 LONG 103 51 06)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
MAY , 1961		OCT , 1961	
04...	84	05...	70
11...	70	12...	81
18...	55	19...	80
25...	41	26...	75
JUN		NOV	
01...	17	28...	102
08...	15	MAY , 1962	
15...	25	03...	68
22...	23	10...	40
29...	19	17...	54
JUL		JUL	
13...	24	26...	108
20...	24	AUG	
27...	25	02...	110
AUG		09...	91
03...	35	16...	75
10...	31	23...	62
17...	27	30...	53
24...	20	SEP	
31...	23	06...	80
SEP		13...	69
07...	84	20...	81
14...	67	27...	88
21...	86	OCT	
28...	77	04...	98

443532103510601 - REDWATER CR BELOW LOWER POWER PLANT NO. 2 (LAT 44 35 32 LONG 103 51 06)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1962		SEP , 1963	
11...	117	12...	48
16...	106	19...	114
25...	127	OCT	
DEC		03...	100
12...	106	10...	101
MAY , 1963		17...	105
23...	135	24...	106
30...	124	31...	143
JUN		MAY , 1964	
06...	135	07...	143
13...	123	21...	127
20...	114	28...	43
27...	123	JUN	
JUL		04...	71
04...	126	JUL	
11...	78	02...	114
18...	68	09...	132
25...	48	16...	106
AUG		23...	81
01...	62	30...	67
08...	40	AUG	
15...	47	06...	46
22...	42	13...	58
29...	75	20...	51
SEP		27...	103
05...	101		

443532103510601 - REDWATER CR BELOW LOWER POWER PLANT NO. 2 (LAT 44 35 32 LONG 103 51 06)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1964		OCT , 1964	
03...	106	22...	126
10...	102	26...	27
24...	124		
OCT			
01...	117		
06...	101		

443640103472701 - FALSE BOTTOM CR NEAR BELLE FOURCHE SD (LAT 44 36 40 LONG 103 47 27)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
MAY , 1960		SEP , 1961	
31...	E.05	21...	.00
JUN		OCT	
14...	E.02	05...	.00
22...	E.02	12...	.00
28...	E.01	13...	E.02
JUL		19...	.00
15...	E.01	26...	.00
21...	E.01	NOV	
24...	.00	28...	.00
AUG		MAY , 1962	
04...	.00	03...	E.02
12...	.00	04...	.00
18...	.00	06...	E.06
26...	.00	11...	.00
SEP		18...	.00
01...	.00	25...	.00
08...	E.03	JUN	
15...	E.03	01...	.00
23...	.00	08...	.00
27...	.00	15...	.00
OCT		22...	.00
04...	.02	29...	.00
AUG , 1961		JUL	
31...	.00	06...	.00
SEP		13...	.00
07...	.00		
14...	.00		

E Estimated.

443640103472701 - FALSE BOTTOM CR NEAR BELLE FOURCHE SD (LAT 44 36 40 LONG 103 47 27)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
JUL , 1962		MAY , 1963	
20...	.00	16...	6.5
AUG		23...	5.1
02...	2.8	30...	4.8
03...	.00	JUN	
09...	E.80	06...	8.0
10...	.00	13...	16
16...	E.50	20...	34
17...	.00	27...	10
23...	E.60	JUL	
24...	.00	08...	8.6
30...	E.50	11...	6.0
SEP		18...	5.6
06...	E.40	25...	4.4
13...	E.60	AUG	
20...	E.60	01...	4.2
27...	E.70	08...	2.0
OCT		15...	1.3
04...	E.50	22...	1.6
11...	E.90	29...	E.90
18...	E.60	SEP	
25...	1.7	05...	3.0
DEC		12...	2.5
12...	2.6	19...	2.7
MAY , 1963		26...	2.6
09...	7.4		

443640103472701 - FALSE BOTTOM CR NEAR BELLE FOURCHE SD (LAT 44 36 40 LONG 103 47 27)--Continued

OCT , 1963		JUL , 1964	
03...	2.6	30...	2.6
10...	2.9	AUG	
16...	3.2	05...	1.0
24...	3.6	13...	1.6
31...	4.5	20...	1.7
MAY , 1964		27...	E.85
07...	E.70	SEP	
14...	3.5	03...	E.95
21...	1.6	10...	2.2
28...	1.6	17...	2.3
JUN		24...	2.4
04...	1.2	OCT	
JUL		01...	2.8
02...	11	08...	2.8
09...	5.3	15...	2.7
16...	3.5	22...	2.9
23...	2.2		

443700103485001 - WEST SIDE DITCH (LAT 44 37 00 LONG 103 48 50)

MAY , 1960		MAY , 1961	
31...	7.6	18...	8.0
JUN		25...	2.7
14...	3.2	JUN	
22...	4.9	01...	2.3
28...	1.4	08...	.14
JUL		15...	.79
15...	.27	22...	.70
22...	.32	29...	.14
29...	.42	JUL	
AUG		06...	10
05...	.93	13...	2.5
12...	1.2	20...	3.3
18...	15	AUG	
26...	4.3	03...	4.2
SEP		10...	E.02
01...	6.5	17...	.15
08...	5.2	24...	3.1
15...	5.2	31...	3.0
23...	9.4	SEP	
28...	4.9	07...	4.6
OCT		21...	13
05...	8.7	28...	9.4
13...	1.7	OCT	
MAY , 1961		05...	E.02
04...	4.3	12...	5.9
11...	E.02		

E Estimated.

443700103485001 - WEST SIDE DITCH (LAT 44 37 00 LONG 103 48 50)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1961		MAY , 1963	
19...	1.4	30...	.09
NOV		JUN	
28...	.91	06...	.44
MAY , 1962		13...	1.2
03...	14	20...	.49
10...	4.5	27...	.76
17...	8.0	JUL	
JUL		04...	.55
26...	.00	11...	5.6
AUG		18...	5.0
02...	.00	25...	3.5
09...	E.60	AUG	
16...	3.2	01...	6.1
23...	5.8	08...	3.4
30...	9.1	15...	2.4
SEP		22...	3.0
06...	14	29...	6.4
13...	7.5	SEP	
20...	3.2	05...	6.4
27...	1.7	12...	4.6
OCT		19...	.71
04...	E.90	26...	E.60
11...	E.60	OCT	
18...	E.50	03...	E.30
25...	.75		
MAY , 1963			
16...	1.5		
23...	1.2		

443700103485001 - WEST SIDE DITCH (LAT 44 37 00 LONG 103 48 50)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1963		AUG , 1964	
10...	3.2	06...	.00
17...	3.1	13...	.76
24...	E.10	20...	3.3
31...	E.30	27...	10
MAY , 1964		SEP	
07...	E.50	03...	7.5
14...	E.60	10...	5.6
21...	6.9	17...	8.4
28...	20	24...	E.60
JUN		OCT	
04...	8.2	01...	5.2
JUL		08...	E.05
02...	.65	16...	6.4
09...	.00	22...	7.6
16...	4.5	29...	E.05
23...	.82		
30...	.00		

443705103491001 - REDWATER CR BELOW WEST SIDE DITCH (LAT 44 37 05 LONG 103 49 10)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1960		MAY , 1961	
31...	11	18...	1.6
JUN		25...	.58
14...	30	JUN	
22...	65	01...	.13
28...	4.8	08...	E.01
JUL		15...	E.04
15...	.04	22...	.04
21...	E.02	29...	.01
29...	E.05	JUL	
AUG		06...	6.2
05...	E.05	13...	.53
12...	.94	20...	.13
16...	21	AUG	
26...	.36	03...	.54
SEP		10...	.38
01...	.10	17...	E.02
08...	.20	24...	.15
15...	9.2	31...	E.02
23...	58	SEP	
28...	49	07...	.15
OCT		21...	34
04...	42	28...	47
13...	29	OCT	
MAY , 1961		05...	60
04...	12	12...	52
11...	38		

E Estimated.

443705103491001 - REDWATER CR BELOW WEST SIDE DITCH (LAT 44 37 05 LONG 103 49 10)--Continued

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1961		JUL , 1963	
19...	51	11...	18
26...	68	18...	16
NOV		25...	.39
28...	60	AUG	
MAY , 1962		01...	17
03...	36	08...	1.7
17...	7.2	15...	1.0
JUN		22...	E.40
26...	117	29...	25
AUG		SEP	
02...	69	05...	103
09...	55	12...	77
16...	E.70	19...	106
23...	E.30	26...	103
30...	E.50	OCT	
SEP		03...	74
06...	26	10...	67
13...	51	17...	76
20...	66	24...	85
27...	64	31...	114
OCT		MAY , 1964	
04...	90	21...	105
11...	110	28...	0.0
18...	61	JUN	
25...	47	04...	0.0
MAY , 1963			
16...	264		

443705103491001 - REDWATER CR BELOW WEST SIDE DITCH (LAT 44 37 05 LONG 103 49 10)--Continued

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
JUL , 1964		SEP , 1964	
16...	83	10...	66
23...	16	17...	68
30...	5.6	24...	83
AUG		OCT	
05...	5.1	01...	97
13...	4.0	08...	113
20...	2.2	15...	92
27...	91	22...	93
SEP		29...	115
03...	84		

06436200 - WHITEWOOD CR NEAR VALE SD (LAT 44 37 18 LONG 103 28 17)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
JUN , 1960		MAY , 1961	
01...	14	19...	14
14...	16	26...	12
22...	14	JUN	
28...	13	02...	11
JUL		09...	11
15...	10	16...	15
22...	8.9	23...	9.1
29...	8.2	30...	9.3
AUG		JUL	
05...	8.0	07...	9.8
12...	8.0	14...	10
16...	13	21...	9.9
25...	8.5	28...	8.6
31...	8.1	AUG	
SEP		04...	8.6
07...	8.8	11...	10
15...	8.5	18...	6.8
22...	13	25...	10
27...	9.0	SEP	
OCT		01...	12
06...	12	08...	9.5
14...	11	15...	12
MAY , 1961		22...	11
05...	17	29...	9.7
12...	12		

E Estimated.

06436200 - WHITEWOOD CK NEAR VALE SD (LAT 44 37 18 LONG 103 28 17)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1961		DEC , 1962	
06...	10	13...	20
13...	13	MAY , 1963	
20...	10	17...	145
27...	9.9	24...	46
NOV		31...	43
27...	13	JUN	
MAY , 1962		14...	47
04...	23	21...	111
11...	20	28...	58
AUG		JUL	
03...	25	05...	58
10...	23	12...	37
17...	18	19...	30
24...	19	26...	26
31...	20	AUG	
SEP		02...	21
07...	15	09...	18
14...	15	16...	16
21...	16	23...	18
28...	14	30...	17
OCT		SEP	
05...	20	06...	17
12...	21	13...	18
19...	16	20...	18
26...	19	27...	25

06436200 - WHITEWOOD CK NEAR VALE SD (LAT 44 37 18 LONG 103 28 17)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1963		JUL , 1964	
04...	15	24...	29
11...	16	30...	21
18...	15	AUG	
25...	14	07...	22
31...	17	14...	20
MAY , 1964		28...	33
06...	67	SEP	
15...	150	04...	23
21...	16	11...	24
22...	59	18...	17
29...	80	25...	21
JUN		OCT	
05...	31	02...	19
JUL		09...	20
03...	74	23...	17
10...	49	30...	17
17...	32		

443740103152201 - BELLE FOURCHE R NR VALE SD (LAT 44 37 40 LONG 103 15 22)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1961		NOV , 1961	
05...	27	27...	28
12...	13	MAY , 1962	
19...	22	04...	15
26...	10	11...	17
JUN		AUG	
02...	12	03...	354
09...	22	10...	98
16...	109	17...	146
23...	59	24...	201
JUL		31...	204
21...	12	SEP	
AUG		07...	173
04...	4.2	14...	106
11...	4.2	21...	118
18...	8.1	28...	140
25...	4.2	OCT	
SEP		05...	144
01...	6.2	12...	105
08...	6.2	19...	65
15...	12	26...	59
22...	17	DEC	
29...	19	13...	31
OCT		MAY , 1963	
06...	16	24...	170
13...	22		
20...	12		
27...	12		

443740103152201 - BELLE FOURCHE R NR VALE SD (LAT 44 37 40 LONG 103 15 22)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1963		MAY , 1964	
31...	151	22...	64
JUL		29...	101
05...	211	JUN	
12...	196	05...	179
19...	216	JUL	
26...	191	10...	259
AUG		17...	150
02...	195	24...	259
09...	187	30...	269
16...	175	AUG	
23...	198	07...	279
30...	253	14...	227
SEP		21...	275
06...	315	28...	268
18...	192	SEP	
27...	183	04...	178
OCT		10...	156
04...	186	18...	167
11...	184	25...	168
18...	111	OCT	
25...	71	02...	196
31...	93	09...	172
MAY , 1964		23...	59
08...	104	30...	58
15...	208		

443800103191701 - HORSE CR NEAR VALE SD (LAT 44 38 00 LONG 103 19 17)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
JUN , 1960		JUN , 1961	
01...	28	02...	2.9
14...	93	09...	6.5
22...	12	16...	39
28...	9.1	23...	2.6
JUL		30...	.24
15...	25	JUL	
22...	13	21...	1.2
29...	11	28...	3.5
AUG		AUG	
05...	19	04...	.72
12...	17	11...	.02
19...	86	18...	.10
25...	14	25...	.25
31...	2.9	SEP	
SEP		22...	.02
07...	18	OCT	
15...	15	06...	E.02
22...	5.3	13...	.40
27...	.21	20...	.23
OCT		27...	.49
06...	1.5	NOV	
14...	1.8	27...	1.1
MAY , 1961		MAY , 1962	
05...	1.8	04...	.58
12...	.82		
19...	.90		
26...	1.4		

E Estimated.

BEST DOCUMENT AVAILABLE

443909103191701 - HORSE CR NEAR VALE SD (LAT 44 39 09 LONG 103 19 17)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
MAY , 1982		JUN , 1983	
11...	.22	14...	143
JUL		21...	134
27...	19	28...	126
AUG		JUL	
03...	44	05...	95
10...	13	12...	77
17...	51	19...	73
24...	67	26...	79
31...	62	AUG	
SEP		02...	112
07...	58	09...	67
14...	27	16...	82
21...	37	23...	94
28...	49	30...	106
OCT		SEP	
05...	47	06...	104
12...	23	13...	85
19...	6.1	20...	92
26...	4.7	27...	91
DEC		OCT	
13...	2.5	04...	96
MAY , 1983		11...	78
10...	15	18...	74
17...	21	25...	8.4
24...	3.0		
31...	4.5		

443909103191701 - HORSE CR NEAR VALE SD (LAT 44 39 09 LONG 103 19 17)--Continued

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
OCT , 1983		AUG , 1984	
31...	12	07...	81
MAY , 1984		14...	106
08...	4.1	21...	134
15...	6.3	SEP	
22...	1.5	04...	62
29...	29	11...	53
JUN		18...	51
05...	73	25...	46
JUL		OCT	
10...	76	02...	43
17...	43	09...	54
24...	128	23...	7.3
31...	122	30...	5.4

443953103253301 - INDIAN CR [illegible] (LAT 44 39 53 LONG 103 25 33)

DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)
JUN , 1984		AUG , 1984	
14...	4.4	31...	14
22...	.84	SEP	
28...	.72	07...	23
JUL		15...	12
15...	17	22...	.09
22...	16	27...	.09
29...	19	OCT	
AUG		04...	.09
05...	17	18...	.09
12...	5.5		
25...	.84		

BEST DOCUMENT AVAILABLE

443940103494501 - MCCLURE DITCH NR BELLE FOURCHE SD (LAT 44 39 40 LONG 103 49 45)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
MAY , 1961		OCT , 1961	
04...	.00	05...	E.02
11...	.00	12...	.00
18...	3.1	19...	.00
25...	4.8	26...	.00
JUN		NOV	
01...	E.01	27...	.00
08...	.00	MAY , 1962	
15...	.00	03...	7.6
22...	1.4	10...	3.2
29...	2.7	17...	E.12
JUL		JUL	
13...	.00	26...	.00
20...	.66	AUG	
27...	.00	02...	.00
AUG		09...	.00
03...	.00	16...	.00
10...	.00	23...	.00
17...	.00	30...	.00
24...	E.01	SEP	
31...	.98	06...	.00
SEP		13...	.00
07...	2.1	20...	.00
14...	.00	27...	.00
21...	E.02	OCT	
28...	E.02	04...	.00

443940103494501 - MCCLURE DITCH NR BELLE FOURCHE SD (LAT 44 39 40 LONG 103 49 45)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1962		SEP , 1963	
11...	.00	19...	.00
18...	.00	26...	.00
25...	.00	OCT	
MAY , 1963		03...	.00
09...	.00	10...	.00
16...	.00	17...	.00
23...	.00	31...	.00
30...	.00	MAY , 1964	
JUN		07...	E.80
06...	.00	14...	E.60
13...	.00	21...	1.5
20...	.00	28...	2.4
27...	.00	JUN	
JUL		04...	.43
04...	.00	JUL	
11...	.00	02...	.00
18...	.00	09...	E.01
25...	.00	16...	E.01
AUG		23...	2.3
01...	.00	30...	2.3
08...	.00	AUG	
15...	.00	05...	1.5
22...	.00	13...	E.09
29...	.00		
SEP			
05...	.00		
12...	.00		

443940103494501 - MCCLURE DITCH NR BELLE FOURCHE SD (LAT 44 39 40 LONG 103 49 45)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
AUG , 1964		OCT , 1964	
20...	2.6	08...	2.7
SEP		15...	.00
24...	E.03	22...	.00
OCT		29...	.00
01...	9.6		

E Estimated.

444000103450001 - REDWATER IRRIGATION ASSOCIATION DITCH (LAT 44 40 00 LONG 103 19 17)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
MAY , 1960		MAY , 1961	
31...	34	18...	58
JUN		25...	40
14...	44	JUN	
22...	11	01...	22
28...	41	08...	24
JUL		15...	26
14...	28	22...	50
21...	27	29...	23
29...	30	JUL	
AUG		13...	27
04...	30	20...	33
12...	49	AUG	
18...	67	03...	47
26...	61	10...	34
SEP		17...	38
01...	40	24...	24
08...	62	31...	36
15...	52	SEP	
23...	38	07...	47
27...	33	21...	42
OCT		28...	27
04...	24	OCT	
13...	51	05...	23
MAY , 1961		12...	26
04...	50	19...	32
11...	38		

444000103450001 - REDWATER IRRIGATION ASSOCIATION DITCH (LAT 44 40 00 LONG 103 19 17)--Continued

OCT , 1961		MAY , 1963	
26...	33	09...	4.2
NOV		16...	3.9
28...	31	23...	9.1
MAY , 1962		30...	40
03...	31	JUN	
10...	39	06...	26
17...	58	13...	14
JUL		20...	9.3
26...	6.6	27...	7.9
AUG		JUL	
02...	84	04...	62
09...	62	11...	73
16...	82	18...	66
23...	63	25...	56
30...	29	AUG	
SEP		01...	63
06...	44	08...	50
13...	44	15...	54
20...	41	22...	61
27...	44	29...	63
OCT		SEP	
04...	17	05...	9.9
11...	24	12...	28
18...	35	19...	21
25...	36		
DEC			
12...	40		

444000103450001 - REDWATER IRRIGATION ASSOCIATION DITCH (LAT 44 40 00 LONG 103 19 17)--Continued

SEP , 1963		JUL , 1964	
26...	20	30...	78
OCT		AUG	
03...	35	06...	67
10...	39	13...	60
17...	40	20...	53
24...	38	27...	34
31...	38	SEP	
MAY , 1964		03...	29
07...	15	10...	61
14...	16	17...	51
21...	25	24...	46
28...	66	OCT	
JUN		01...	25
04...	72	08...	33
JUL		15...	38
02...	F.25	22...	34
09...	68	29...	36
16...	68		
23...	79		

444000103494001 - REDWATER CR BELOW MCCLURE DITCH (LAT 44 40 00 LONG 103 49 40)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
MAY , 1961		OCT , 1961	
04...	15	19...	59
11...	37	26...	53
18...	4.8	NOV	
25...	.42	27...	79
JUN		MAY , 1962	
01...	3.2	03...	29
08...	3.6	10...	.10
15...	4.9	17...	9.8
22...	1.8	JUL	
29...	.12	26...	119
JUL		AUG	
13...	3.1	02...	94
20...	.58	09...	42
AUG		16...	4.6
03...	2.9	22...	5.5
10...	2.1	30...	8.5
17...	1.8	SEP	
24...	1.9	05...	36
31...	.10	13...	56
SEP		20...	68
07...	.38	27...	70
21...	48	OCT	
28...	50	04...	97
OCT		11...	110
05...	66	18...	85
12...	59		

444000103494001 - REDWATER CR BELOW MCCLURE DITCH (LAT 44 40 00 LONG 103 49 40)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1962		MAY , 1964	
25...	98	21...	102
MAY , 1963		28...	26
30...	112	JUN	
JUL		04...	18
04...	106	JUL	
11...	25	23...	22
18...	25	30...	8.2
25...	8.1	AUG	
AUG		05...	6.8
01...	24	13...	6.3
08...	6.5	20...	2.1
15...	4.2	27...	98
22...	3.8	SEP	
29...	31	03...	89
SEP		10...	65
05...	110	17...	71
12...	77	24...	98
19...	107	OCT	
26...	106	01...	92
OCT		08...	105
03...	77	15...	86
10...	69	22...	93
17...	81	29...	107
24...	97		
31...	117		

MISCELLANEOUS DISCHARGE MEASUREMENTS

444009103330901 - BELLE FOURCHE RIVER NR NISLAND SD (LAT 44 40 09 LONG 103 33 09)

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
JUN , 1960		MAY , 1961	
01...	6.2	26...	.54
14...	16	JUN	
22...	5.5	02...	.29
28...	5.0	09...	.22
JUL		16...	.98
15...	2.0	23...	E.01
22...	.75	30...	.11
29...	1.7	JUL	
AUG		07...	.26
05...	2.0	14...	1.3
12...	1.1	21...	.24
19...	1.3	AUG	
25...	.85	04...	.16
31...	1.5	11...	.41
SEP		18...	.54
07...	1.5	25...	.58
15...	3.0	SEP	
22...	8.4	01...	.41
27...	7.9	08...	1.0
OCT		15...	3.2
06...	9.8	22...	11
14...	8.2	29...	3.4
MAY , 1961		OCT	
05...	7.7	06...	6.7
12...	4.8		
19...	6.2		

444009103330901 - BELLE FOURCHE RIVER NR NISLAND SD (LAT 44 40 09 LONG 103 33 09)--Continued

OCT , 1961		DEC , 1962	
13...	7.7	12...	18
20...	5.0	MAY , 1963	
27...	3.8	24...	58
NOV		31...	58
27...	8.6	JUN	
MAY , 1962		28...	151
04...	4.8	JUL	
11...	6.6	05...	20
JUL		12...	30
27...	314	19...	17
AUG		26...	17
03...	246	AUG	
10...	16	02...	19
17...	20	09...	11
24...	16	16...	19
31...	18	23...	19
SEP		30...	26
07...	16	SEP	
14...	15	06...	27
21...	20	13...	21
28...	20	20...	26
OCT		27...	24
05...	22	OCT	
12...	21	04...	22
19...	18	11...	35
26...	17	18...	33

444009103330901 - BELLE FOURCHE RIVER NR NISLAND SD (LAT 44 40 09 LONG 103 33 09)--Continued

OCT , 1963		AUG , 1964	
25...	33	07...	22
31...	53	14...	18
MAY , 1964		21...	29
08...	8.7	28...	25
15...	10	SEP	
22...	9.4	04...	19
29...	11	11...	20
JUN		18...	18
05...	7.7	25...	25
JUL		OCT	
10...	25	02...	22
17...	14	09...	20
24...	14	23...	16
31...	19	30...	16

E Estimated.

444035098171901 - JAMES RIVER BELOW SPINK COUNTY DAM (LAT 44 40 35 LONG 098 17 19)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1952		JAN , 1953	
02...	.00	28...	.00
DEC			
04...	.00		

444038103283401 - OWL CR NR NISLAND SD (LAT 44 40 38 LONG 103 28 34)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
JUN , 1960		JUN , 1961	
01...	4.4	09...	6.4
14...	13	16...	4.3
22...	1.4	23...	.08
28...	1.1	JUL	
JUL		07...	1.0
15...	15	14...	E.02
22...	9.6	21...	1.3
29...	9.3	28...	1.6
AUG		AUG	
05...	10	04...	.22
12...	9.0	11...	1.6
19...	7.8	18...	.98
25...	2.7	23...	.22
31...	5.4	SEP	
SEP		01...	E.02
07...	8.6	15...	E.02
15...	3.3	22...	E.02
22...	3.0	29...	E.02
27...	1.1	OCT	
OCT		06...	E.01
06...	.49	13...	.07
14...	.57	20...	.03
MAY , 1961		27...	.08
05...	.42		
12...	.11		
19...	E.02		

444038103283401 - OWL CR NR NISLAND SD (LAT 44 40 38 LONG 103 28 34)--Continued

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
NOV , 1961		MAY , 1963	
27...	.30	24...	2.4
MAY , 1962		31...	15
04...	E.02	JUN	
11...	E.03	07...	36
JUL		14...	7.8
27...	12	21...	7.8
AUG		28...	16
03...	8.1	JUL	
10...	8.8	05...	13
17...	20	19...	25
24...	36	26...	20
31...	28	AUG	
SEP		02...	18
07...	23	09...	9.4
14...	11	16...	27
21...	14	23...	31
28...	18	30...	32
OCT		SEP	
05...	11	06...	8.8
12...	7.1	13...	8.7
19...	4.1	20...	7.5
26...	2.5	27...	12
DEC		OCT	
13...	E.50	04...	11
MAY , 1963		11...	11
10...	1.8		
17...	1.7		

E Estimated.

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444038103283401 - OWL CR NR NISLAND SD (LAT 44 40 38 LONG 103 28 34)--Continued

DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAMFLOW, INSTANTANEOUS (CFS) (00061)
OCT , 1963		AUG , 1964	
10...	6.0	07...	46
25...	2.0	14...	46
31...	4.2	21...	44
MAY , 1964		SEP	
08...	.52	04...	6.1
15...	E.80	11...	8.2
22...	E.20	18...	15
29...	20	25...	37
JUN		OCT	
05...	28	02...	19
JUL		09...	15
10...	24	23...	2.7
17...	34	30...	E1.0
24...	34		
30...	43		

444846098162301 - TIMBER CK NEAR FRANKFORT SD (LAT 44 48 46 LONG 098 16 23)

OCT , 1952		JAN , 1953	
02...	.00	28...	.00
DEC		FEB	
03...	.00	27...	.00

445325098202801 - DRY RUN AT FISHER GROVE PARK (LAT 44 53 25 LONG 098 20 28)

DEC , 1952		FEB , 1953	
03...	.00	27...	.00
JAN , 1953			
28...	.00		

445736098295201 - SNAKE CR NEAR ASHTON SD (LAT 44 57 36 LONG 098 29 52)

SEP , 1952		JAN , 1953	
30...	.00	27...	.00
DEC		MAR	
03...	.00	02...	4.2

450205098282001 - UNNAMED TRIB TO JAMES R NEAR ASHTON SD (LAT 45 02 05 LONG 098 28 20)

SEP , 1952		JAN , 1953	
30...	.00	27...	.00
DEC		MAR	
03...	.00	05...	.00

451051098232401 - JAMES RIVER NEAR BRENTFORD SD (LAT 45 10 51 LONG 098 23 24)

SEP , 1952		JAN , 1953	
29...	E.10	27...	.00
DEC		MAR	
03...	.00	05...	E.60

451052098231801 - MUD CR NEAR BRENTFORD SD (LAT 45 10 52 LONG 098 23 18)

SEP , 1951		JAN , 1953	
29...	.00	27...	.00
DEC , 1952		MAR	
03...	.00	05...	.16

451125101551001 - FLINT ROCK CK AT MOUTH NR RED ELM SD (LAT 45 11 25 LONG 101 55 10)

APR , 1949	
14...	45

E Estimated.

452127098192301 - MOCCASIN CR NEAR STRATFORD SD (LAT 45 21 27 LONG 098 19 23)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1952		JAN , 1953	
29...	.00	27...	.00
DEC		MAR	
02...	.00	04...	.00

452643098160001 - JAMES RIVER NEAR BATH SD (LAT 45 26 43 LONG 098 16 00)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1952		JAN , 1953	
29...	-1.2	26...	1.4
DEC		MAR	
02...	3.2	04...	1.0

453103098125901 - UNNAMED TRIB TO JAMES R NR TACOMA PARK (LAT 45 31 03 LONG 098 12 59)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1952		JAN , 1953	
29...	.00	26...	.00
DEC		MAR	
02...	.00	04...	.00

453248098133301 - CROW CR AT TACOMA PARK NR COLUMBIA SD (LAT 45 32 48 LONG 098 13 33)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1952		JAN , 1953	
29...	2.2	26...	.00
DEC		MAR	
02...	.40	04...	.00

453554098183801 - ELM RIVER AT COLUMBIA SD (LAT 45 35 54 LONG 098 18 38)

DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	DATE	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)
SEP , 1952		JAN , 1953	
29...	.00	26...	1.2
DEC		MAR	
02...	1.3	04...	1.0

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06334500 - LITTLE MISSOURI R AT CAMP CROOK SD (LAT 45 32 49 LONG 103 58 23)					
OCT , 1980					
07...	0930	.79	12.5	24.0	1700
NOV					
04...	1000	3.6	4.0	11.5	1480
JAN , 1981					
13...	1105	6.8	1.0	6.5	1820
MAR					
03...	1100	16	2.5	18.5	2050
APR					
07...	0950	2.5	6.0	8.5	1600
MAY					
13...	1050	6.1	11.0	18.5	1650
JUN					
02...	0835	1.7	15.0	12.5	1520
JUL					
08...	1000	1.1	16.5	17.5	1600
AUG					
05...	1015	69	19.5	23.5	700
SEP					
09...	1020	2.7	17.5	28.0	1080
06355500 - NORTH FORK GRAND R NEAR WHITE BUTTE SD (LAT 45 46 10 LONG 102 21 45)					
NOV , 1980					
13...	1500	2.6	2.5	.5	3900
JAN , 1981					
07...	1500	4.4	1.0	1.5	3900
MAR					
11...	1610	4.9	5.5	17.5	2150
MAY					
06...	1415	.02	16.5	16.0	3300
JUL					
01...	1500	.02	27.5	31.5	--
28...	0715	4.0	22.0	--	--
AUG					
27...	1430	.66	26.0	27.0	2350
06356000 - SOUTH FORK GRAND R AT BUFFALO SD (LAT 45 34 34 LONG 103 32 38)					
NOV , 1980					
04...	1145	2.4	4.0	14.5	1600
JAN , 1981					
13...	1315	2.1	.5	7.0	1800
MAR					
03...	1300	8.2	1.5	12.5	1540
APR					
07...	1210	2.6	6.0	13.0	1710
MAY					
13...	1300	3.7	11.5	19.0	1140
JUN					
02...	1045	2.6	15.0	14.0	2020
JUL					
08...	1155	1.0	19.0	23.0	1600
AUG					
05...	1200	21	21.0	24.5	490
SEP					
09...	1150	1.1	18.0	32.0	1650

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WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06356500 - SOUTH FORK GRAND R NEAR CASH SD (LAT 45 38 56 LONG 102 38 27)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
16...	0910	14	4.5	1.0	1950
NOV					
23...	1315	11	2.0	1.5	2650
JAN , 1981					
07...	1400	13	1.0	2.0	2325
MAR					
11...	1440	14	7.5	18.0	1900
APR					
09...	1225	11	13.0	--	2300
MAY					
06...	1310	8.7	15.0	18.0	2600
JUN					
04...	1310	14	--	17.0	2300
JUL					
01...	1405	7.2	29.0	35.0	--
24...	0830	9.1	19.5	--	--
AUG					
27...	1255	5.2	24.5	25.0	2225
SEP					
29...	1250	8.9	--	--	--

06359500 - MOREAU R NEAR FAITH SD (LAT 45 11 52 LONG 102 09 22)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
16...	1100	26	5.0	3.0	1650
NOV					
14...	0815	4.1	.0	-3.5	970
JAN , 1981					
08...	1010	8.8	.1	2.0	2650
MAR					
12...	0750	12	2.0	.0	1400
APR					
13...	--	6.5	--	--	--
MAY					
07...	0745	2.3	9.0	8.5	3500
JUN					
05...	0725	7.8	17.5	--	2800
JUL					
02...	0735	9.7	21.5	22.0	--
24...	1010	4.5	23.5	28.0	--
AUG					
28...	0745	2.3	16.5	17.0	1400
SEP					
30...	--	21	--	--	--

06392900 - BEAVER CR AT MALLO CAMP NEAR FOUR CORNERS WY (LAT 44 05 04 LONG 104 03 41)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
08...	1110	2.4	5.0	17.5	450
JAN , 1981					
13...	1220	1.5	.0	4.5	495
MAR					
11...	1400	2.0	4.0	8.5	418
APR					
15...	1200	1.9	7.0	14.0	400
MAY					
13...	1320	1.9	5.5	3.0	415
JUN					
10...	1145	1.8	9.0	18.5	430
JUL					
15...	1310	2.0	15.0	23.5	406
AUG					
10...	1300	2.2	10.5	22.0	410
SEP					
10...	1305	2.4	10.5	30.5	417

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06392950 - STOCKADE BEAVER CR NEAR NEWCASTLE WY (LAT 43 51 30 LONG 104 06 23)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
08...	1455	9.5	10.0	25.0	1960
JAN , 1981					
13...	1000	12	1.5	6.5	2610
MAR					
11...	1050	12	4.5	18.0	1960
APR					
12...	1030	11	8.5	10.0	590
15...	1030	11	8.5	10.0	590
MAY					
13...	1055	7.4	10.0	9.0	2030
JUN					
10...	0950	12	13.0	18.5	2050
JUL					
15...	1000	7.0	18.0	20.0	1910
AUG					
10...	1050	10	13.5	23.5	1940
SEP					
10...	1055	11	13.5	30.0	1950

06395000 - CHEYENNE R AT EDGEMONT SD (LAT 43 18 20 LONG 103 49 14)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
07...	0905	.28	9.0	11.0	5700
NOV					
18...	0905	6.2	.0	-5.0	6000
JAN , 1981					
06...	1010	28	.0	.0	3780
MAR					
03...	1010	41	2.5	11.0	3970
APR					
07...	1225	5.1	7.0	10.0	5100
MAY					
05...	1110	9.6	17.5	19.0	5350
JUN					
01...	1800	17	26.5	24.5	3700
JUL					
06...	1655	.07	31.5	39.5	6500
AUG					
04...	0805	42	19.0	21.0	1875
SEP					
09...	0840	6.2	14.0	15.0	4150

06400000 - HAT CR NEAR EDGEMONT SD (LAT 43 14 46 LONG 103 35 16)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
JAN , 1981					
06...	1230	.51	2.0	.0	2090
MAR					
03...	1330	.11	10.5	12.0	2960
APR					
07...	1015	.02	9.0	8.0	3530
MAY					
04...	1550	.03	17.0	15.0	3920
JUN					
01...	1520	.04	26.5	30.0	3480

06400497 - CASCADE SPRINGS NEAR HOT SPRINGS SD (LAT 43 20 20 LONG 103 33 08)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
07...	1120	19	20.0	20.0	2615
JAN , 1981					
14...	1435	18	19.5	8.0	2680
MAR					
03...	1520	18	20.0	11.0	2600
APR					
07...	0850	18	20.0	8.0	2640
MAY					
05...	1300	18	20.5	22.5	2600
JUN					
02...	0915	18	20.5	15.0	2620
JUL					
06...	1325	19	20.5	38.0	2670
AUG					
04...	1100	15	20.5	27.5	2575
SEP					
09...	1045	19	20.5	28.0	2600

06402000 - FALL R AT HOT SPRINGS SD (LAT 43 25 50 LONG 103 28 33)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
07...	1250	20	25.0	24.0	1295
NOV					
18...	1115	22	22.0	8.0	1330
JAN , 1981					
06...	1455	21	21.0	2.0	1325
MAR					
03...	1710	22	22.5	13.0	965
APR					
06...	1715	22	24.0	11.5	1270
MAY					
05...	1435	20	25.5	22.5	1300
JUN					
02...	1200	21	27.0	20.0	1250
JUL					
06...	1110	18	28.5	36.0	1340
AUG					
04...	1240	22	27.5	30.5	1275
SEP					
09...	1240	22	28.0	38.0	1290

06402500 - BEAVER CR NEAR BUFFALO GAP SD (LAT 43 27 56 LONG 103 18 22)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
NOV , 1980					
18...	1315	12	5.0	8.0	2550
JAN , 1981					
07...	1045	7.8	2.0	17.5	2680
MAR					
04...	1125	9.0	6.5	12.5	2460
APR					
08...	0905	.92	4.5	17.0	3000
MAY					
06...	1430	1.9	11.0	9.5	2800
JUN					
02...	1705	1.2	21.5	20.5	2980
JUL					
07...	1630	1.3	27.0	37.0	2860
AUG					
04...	1400	11	21.5	25.5	2450
SEP					
09...	1505	10	19.5	33.5	2435

06404000 - BATTLE CR NEAR KEYSTONE SD (LAT 43 52 18 LONG 103 20 09)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
NOV , 1980					
18...	1545	1.3	2.0	3.0	320
JAN , 1981					
07...	1525	1.3	.5	3.0	320
MAR					
05...	1320	1.8	3.5	12.0	305
APR					
09...	0935	1.6	3.0	16.5	273
MAY					
07...	1330	25	14.0	16.0	202
17...	1100	332	9.0	11.5	118
JUN					
03...	1615	11	21.5	29.0	203
JUL					
08...	1630	.50	25.5	26.5	288
AUG					
05...	1425	4.5	25.5	29.5	233
SEP					
04...	1420	.72	18.5	27.5	270

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06404998 - GRACE COOLIDGE CR NR GAME LODGE NR CUSTER (LAT 43 45 40 LONG 103 21 49)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
08...	1150	.56	12.0	19.5	207
NOV					
19...	1450	.87	3.0	5.5	196
JAN , 1981					
07...	1320	1.2	1.0	15.5	202
MAR					
04...	1445	.67	5.5	9.5	188
APR					
08...	1205	.71	7.5	9.5	194
MAY					
07...	0945	6.2	8.5	15.0	178
18...	1040	251	8.0	10.0	265
JUN					
03...	1145	8.4	15.0	20.0	160
JUL					
08...	1215	1.2	20.5	21.5	192
AUG					
05...	1000	3.5	19.0	23.5	158
SEP					
04...	1010	2.0	14.5	15.0	180

06406000 - BATTLE CR AT HERMOSA SD (LAT 43 49 41 LONG 103 11 44)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
08...	0920	1.6	12.0	18.0	750
NOV					
19...	1050	3.2	2.5	10.0	710
JAN , 1981					
14...	1200	2.9	1.5	9.0	721
MAR					
05...	1110	2.7	4.5	11.0	685
APR					
08...	1405	2.5	8.5	14.5	688
MAY					
07...	1125	3.4	10.0	16.0	636
17...	1350	166	10.0	10.5	170
18...	1245	635	9.0	16.0	140
JUN					
03...	1415	7.1	18.5	27.0	620
JUL					
08...	1420	.28	22.0	29.5	723
AUG					
05...	1210	3.2	20.5	28.0	686
SEP					
04...	1155	1.2	15.0	24.5	772

06408500 - SPRING CR NEAR HERMOSA SD (LAT 43 56 30 LONG 103 09 33)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
JAN , 1981					
14...	1015	.03	1.0	7.0	1125
MAR					
05...	0855	.07	2.5	12.5	658
APR					
08...	1515	.07	11.0	11.5	933
MAY					
05...	1615	.01	22.0	19.0	990

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06410000 - CASTLE CR BELOW DEERFIELD DAM SD (LAT 44 01 45 LONG 103 46 53)					
OCT , 1980					
14...	1100	22	10.0	15.0	405
NOV					
10...	1210	2.2	8.0	18.5	390
JAN , 1981					
06...	1230	2.4	2.5	-1.0	440
MAR					
09...	1120	2.2	6.0	6.5	430
APR					
01...	1105	9.7	4.5	--	720
MAY					
08...	1240	14	7.5	9.0	313
JUN					
08...	1035	10	9.5	17.0	413
JUL					
02...	1115	7.8	9.0	13.5	420
31...	0925	26	9.5	24.5	403
31...	1150	59	10.0	26.0	406
31...	1330	41	10.5	27.5	407
SEP					
01...	1315	23	10.0	23.0	330
06410500 - RAPID CR ABOVE PACTOLA RES NEAR SILVER CITY SD (LAT 44 05 05 LONG 103 34 48)					
OCT , 1980					
08...	1620	32	10.0	16.5	410
NOV					
10...	1010	15	3.5	7.5	395
JAN , 1981					
08...	1045	8.6	.0	-.5	332
MAR					
06...	0955	11	.0	3.5	400
APR					
01...	0930	21	1.5	12.5	405
MAY					
01...	0925	22	6.5	14.5	421
JUN					
05...	1005	32	12.0	19.0	403
JUL					
10...	0925	16	15.5	26.5	396
AUG					
07...	0900	38	12.5	17.0	381
SEP					
02...	1140	34	12.5	25.0	394
06412500 - RAPID CR ABOVE CANYON LAKE NEAR RAPID CITY SD (LAT 44 03 04 LONG 103 18 47)					
OCT , 1980					
09...	0400	3.2	11.0	--	349
15...	0455	7.2	9.0	--	345
15...	0812	12	--	--	--
15...	0815	13	8.5	--	347
15...	1120	23	7.0	--	335
15...	1124	21	--	--	--
15...	1716	7.2	--	--	--
FEB , 1981					
18...	0945	61	.5	--	324
APR					
29...	1400	14	14.5	--	347
MAY					
06...	1540	134	8.5	--	342
06...	2225	119	7.4	--	345
17...	0941	102	--	--	--
17...	0943	102	8.5	--	321
17...	1404	108	--	--	--
17...	1409	108	8.5	--	307
17...	2106	132	8.0	--	311
17...	2113	132	--	--	--
18...	0949	77	8.0	--	307
18...	0950	77	--	--	--
23...	0926	53	10.5	--	385
JUN					
24...	0948	28	17.3	--	340
JUL					
13...	0440	146	11.0	--	346
25...	0955	62	15.4	--	322
25...	1130	59	15.6	--	328

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06414000 - RAPID CR AT RAPID CITY SD (LAT 44 05 09 LONG 103 14 31)					
OCT , 1980					
03...	1110	16	--	--	--
09...	0505	13	11.5	--	548
15...	0400	67	10.5	--	357
15...	0740	154	8.0	--	428
15...	0745	150	--	--	--
15...	1105	142	6.0	--	450
15...	1110	137	--	--	--
15...	1610	61	--	--	--
FEB , 1981					
18...	1125	24	6.5	--	480
APR					
29...	1450	21	18.0	--	456
MAY					
07...	0210	137	9.7	--	367
17...	0858	194	10.5	--	373
17...	1458	217	10.5	--	499
17...	2037	194	9.8	--	8
18...	1157	113	11.0	--	435
23...	0930	69	12.0	--	475
JUN					
24...	1055	26	20.7	--	437
JUL					
13...	0353	463	14.9	--	353
13...	0505	199	14.4	--	393
06422500 - BOXELDER CR NEAR NEMO SD (LAT 44 08 36 LONG 103 27 16)					
OCT , 1980					
03...	1115	2.4	9.5	17.0	359
NOV					
14...	1455	3.1	2.0	-2.0	343
JAN , 1981					
08...	1450	5.3	.0	5.0	342
MAR					
06...	1520	2.1	3.5	-1.0	327
APR					
03...	0955	3.8	4.0	6.5	328
MAY					
01...	1400	2.6	19.0	23.0	324
JUN					
05...	1415	7.4	21.0	21.5	285
JUL					
10...	1450	2.9	25.5	32.0	281
AUG					
07....	1435	4.4	22.5	27.0	280
SEP					
02...	1555	2.0	20.5	25.0	312
06423500 - CHEYENNE R NEAR WASTA SD (LAT 44 04 52 LONG 102 24 03)					
NOV , 1980					
12...	1055	88	5.0	6.0	2340
JAN , 1981					
12...	1050	300	.0	11.5	2185
MAR					
10...	0945	93	4.0	4.0	2050
APR					
02...	1000	85	10.5	14.5	2030
MAY					
08...	1035	706	12.5	17.0	1035
JUN					
04...	1005	86	20.0	28.0	1500
30...	0935	27	21.0	29.5	2520
JUL					
27...	1350	657	16.5	18.0	885
AUG					
06...	1155	235	23.5	30.5	1275
SEP					
03...	1240	53	20.0	25.5	2470
06425500 - ELK CR NEAR ELM SPRINGS SD (LAT 44 14 54 LONG 102 30 10)					
OCT , 1980					
16...	1210	.84	6.0	2.5	1040

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06428500 - BELLE FOURCHE R AT WY-SD STATE LINE (LAT 44 44 59 LONG 104 02 49)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
07...	1620	15	17.5	29.5	2200
21...	1145	--	10.0	--	1690
NOV					
03...	1635	13	8.5	10.0	2100
19...	1200	--	1.5	--	2130
DEC					
15...	1615	--	1.0	--	2170
JAN , 1981					
12...	1630	8.3	.0	11.0	2140
19...	1630	--	.5	--	2240
FEB					
18...	1445	--	1.0	--	1790
MAR					
02...	1545	25	7.0	16.5	1720
19...	1500	--	10.0	--	2070
APR					
06...	1600	13	12.0	14.0	2160
21...	1745	--	13.5	--	1300
MAY					
12...	1200	210	11.0	8.0	1220
22...	1345	--	16.5	--	1290
JUN					
01...	1710	281	22.0	23.5	1150
18...	0845	--	16.0	--	1260
19...	0845	--	16.0	--	--
JUL					
08...	1730	139	25.0	26.0	1300
20...	1845	--	27.0	--	1200
AUG					
05...	1730	269	22.5	28.0	750
20...	1725	--	27.0	--	1190
SEP					
08...	1730	154	20.5	35.5	1020
23...	1400	--	19.0	22.0	1840

06429500 - COLD SPRINGS CR AT BUCKHORN WY (LAT 44 09 14 LONG 104 04 39)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
08...	0940	4.4	8.5	13.5	449
JAN , 1981					
13...	1430	5.8	.0	--	470
MAR					
11...	1725	4.6	5.0	-.5	388
APR					
15...	1500	4.7	12.5	17.0	135
MAY					
13...	1540	4.5	7.5	6.5	388
JUN					
10...	1415	4.3	12.0	21.0	396
JUL					
15...	1545	4.5	17.0	20.5	390
AUG					
10...	1530	4.6	13.5	22.5	378
SEP					
10...	1515	4.1	12.5	26.0	398

06429905 - SAND CR NEAR RANCH A NEAR BEULAH WY (LAT 44 31 13 LONG 104 05 00)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
08...	0930	20	11.0	19.0	820
JAN , 1981					
14...	1300	17	4.0	7.0	760
MAR					
04...	1305	16	7.0	11.0	780
APR					
08...	1205	19	9.0	10.0	760
MAY					
12...	1420	19	10.5	8.5	770
JUN					
01...	1220	20	15.5	22.0	768
JUL					
09...	1215	16	16.0	29.0	760
AUG					
04...	1330	17	17.5	32.0	620
SEP					
10...	1320	17	15.0	28.0	610

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06430000 - MURRAY DITCH AT WY-SD STATE LINE (LAT 44 34 35 LONG 104 02 58)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
08...	1230	5.2	13.5	--	1460
JUL , 1981					
09...	1000	15	15.5	23.0	1720
AUG					
04...	1445	9.4	20.5	29.0	1180
SEP					
10...	0915	6.4	14.0	26.0	1180

06430500 - REDWATER CR AT WY-SD STATE LINE (LAT 44 34 26 LONG 104 02 54)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
08...	1345	21	14.0	28.5	1500
NOV					
05...	0915	26	8.0	--	--
JAN , 1981					
14...	1130	28	5.0	6.5	1490
MAR					
04...	1100	30	6.5	--	--
APR					
08...	1030	26	8.0	--	--
08...	1035	26	8.0	10.0	880
MAY					
12...	1130	19	10.0	8.0	1520
JUN					
01...	1410	20	19.5	22.0	1440
JUL					
09...	1100	2.9	18.5	27.5	1950
AUG					
04...	1600	16	21.5	22.5	1260
12...	1130	--	10.0	--	--
SEP					
10...	1040	19	15.5	26.0	1190
10...	1045	--	15.5	--	--

06431500 - SPEARFISH CR AT SPEARFISH SD (LAT 44 28 57 LONG 103 51 40)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
08...	1535	40	8.0	26.5	460
JAN , 1981					
14...	1450	39	2.5	5.0	440
MAR					
04...	1445	37	3.5	10.0	430
APR					
08...	1335	40	--	--	430
MAY					
12...	1630	44	7.0	10.0	419
JUN					
01...	1055	51	10.0	15.5	430
JUL					
09...	1345	35	13.0	31.0	440
AUG					
04...	1100	38	13.0	30.5	350
SEP					
10...	1450	34	10.5	27.5	340

06433000 - REDWATER RIVER ABOVE BELLE FOURCHE SD (LAT 44 40 02 LONG 103 50 20)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
06...	1600	83	16.0	27.5	1340
NOV					
04...	1630	144	8.0	14.0	1260
JAN , 1981					
14...	0930	123	3.0	--	1260
MAR					
04...	0900	123	4.0	3.0	1280
APR					
08...	0655	111	6.0	7.0	870
JUN					
03...	1220	86	18.0	22.5	1430
JUL					
09...	0815	2.7	19.0	18.5	1670
AUG					
06...	1030	40	19.5	23.0	1170
SEP					
08...	1200	68	17.5	30.0	1160

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06433500 - HAY CR AT BELLE FOURCHE SD (LAT 44 40 01 LONG 103 50 46)					
AUG , 1981					
06...	0830	1.0	18.0	19.0	1280
06436000 - BELLE FOURCHE R NEAR FRUITDALE SD (LAT 44 41 27 LONG 103 44 14)					
OCT , 1980					
06...	1420	4.1	17.5	27.5	2450
MAR , 1981					
02...	1400	3.6	7.0	13.5	1980
APR					
06...	1400	2.9	12.5	18.0	2270
MAY					
12...	1720	5.9	14.0	11.5	2140
JUN					
02...	1530	3.6	22.5	25.0	2180
JUL					
07...	1550	3.4	32.5	34.0	2040
AUG					
06...	1200	4.9	22.5	27.5	1550
SEP					
09...	1705	9.3	14.0	--	1580
06438500 - CHEYENNE R NEAR PLAINVIEW SD (LAT 44 31 16 LONG 101 59 34)					
OCT , 1980					
16...	1345	342	--	--	--
NOV					
14...	1045	165	3.5	5.0	2520
JAN , 1981					
08...	1335	158	1.0	5.5	2180
MAR					
12...	1050	140	6.5	14.5	2320
APR					
10...	0850	104	--	12.0	2450
MAY					
07...	1000	141	10.5	11.5	3100
JUN					
05...	0955	272	--	--	1750
JUL					
02...	1145	235	24.5	24.0	1280
24...	--	3280	--	--	--
AUG					
28...	1100	272	22.0	24.0	2020
SEP					
30...	1020	139	--	--	2150
06441000 - BAD R NEAR MIDLAND SD (LAT 44 04 01 LONG 101 09 36)					
AUG , 1981					
04...	--	F50	--	--	--
06445980 - WHITE CLAY CR NEAR OGLALA SD (LAT 43 08 46 LONG 102 40 58)					
OCT , 1980					
06...	1320	2.1	12.0	21.0	570
NOV					
17...	1405	3.8	.0	1.0	622
JAN , 1981					
05...	1520	13	.0	5.5	492
MAR					
02...	1510	12	.5	11.5	450
APR					
06...	1420	9.4	11.5	21.0	471
MAY					
04...	1050	7.3	12.5	--	494
JUN					
01...	1045	10	17.5	22.5	450
JUL					
07...	0925	.69	21.5	30.0	644
AUG					
03...	1600	4.6	26.0	32.0	449
SEP					
08...	1210	5.3	16.5	28.5	468

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06446000 - WHITE R NEAR OGLALA SD (LAT 43 15 17 LONG 102 49 29)					
OCT , 1980					
06...	1125	3.6	12.0	22.0	810
NOV					
17...	1135	5.0	.0	2.5	1195
JAN , 1981					
05...	1535	11	.0	.0	848
MAR					
02...	1220	34	.5	14.5	560
APR					
06...	1200	13	10.0	18.5	592
MAY					
04...	1255	11	13.5	20.5	802
JUN					
01...	1230	9.1	20.5	29.0	595
JUL					
07...	1310	1.3	28.0	38.5	563
AUG					
03...	1755	14	27.0	27.0	620
SEP					
08...	1430	.84	21.5	32.5	1355
06447000 - WHITE R NEAR KADOKA SD (LAT 43 45 09 LONG 101 31 28)					
OCT , 1980					
28...	1140	13	7.0	6.0	410
NOV					
24...	1100	22	2.0	8.5	595
JAN , 1981					
20...	1200	17	--	--	--
MAR					
18...	1000	11	4.0	--	580
APR					
15...	1045	14	14.5	22.5	690
MAY					
13...	1100	50	11.0	19.0	525
JUN					
09...	1130	20	18.0	19.0	525
JUL					
07...	1200	88	26.0	32.0	540
SEP					
01...	1110	14	21.0	28.0	480
06447500 - LITTLE WHITE R NEAR MARTIN SD (LAT 43 10 00 LONG 101 37 47)					
OCT , 1980					
02...	1445	14	--	--	250
28...	1630	12	6.5	3.0	290
NOV					
24...	1345	14	2.0	9.0	200
JAN , 1981					
20...	1430	12	--	--	240
MAR					
18...	1340	17	--	--	200
APR					
15...	1330	11	12.0	15.0	240
MAY					
13...	1355	18	13.0	19.0	--
JUN					
09...	1415	6.2	21.0	23.5	250
JUL					
08...	0650	3.9	20.0	17.5	--
AUG					
05...	0700	16	--	--	200
SEP					
02...	0610	7.5	17.0	18.0	--

BEST DOCUMENT AVAILABLE

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06449000 - LAKE CR BELOW REFUGE NEAR TUTHILL SD (LAT 43 08 46 LONG 101 30 38)					
OCT , 1980					
02...	1140	1.1	14.0	16.5	850
28...	--	E.01	--	--	--
NOV					
24...	1200	.00	--	--	--
JAN , 1981					
20...	1330	2.4	.0	5.0	--
MAR					
18...	1250	3.1	--	--	370
APR					
15...	1310	5.7	13.0	17.0	430
MAY					
13...	1300	7.1	15.0	19.0	480
JUN					
09...	1315	1.4	21.0	19.0	510
JUL					
07...	1300	9.2	27.0	31.5	--
AUG					
05...	0600	21	--	--	490
SEP					
01...	1320	2.4	23.5	28.0	--
06449100 - LITTLE WHITE R NEAR VETAL SD (LAT 43 06 03 LONG 101 13 49)					
OCT , 1980					
03...	1130	23	14.5	16.0	300
29...	1000	32	6.0	4.0	280
NOV					
25...	0900	27	2.0	1.5	260
JAN , 1981					
21...	0930	17	1.0	-2.0	290
MAR					
19...	0930	38	--	--	270
APR					
16...	0655	26	8.0	10.5	320
MAY					
14...	0915	34	13.0	16.5	325
JUN					
10...	0600	30	14.0	--	300
JUL					
08...	0630	22	17.0	18.5	--
AUG					
05...	0940	38	--	--	370
SEP					
02...	0950	25	18.5	25.5	--
06449400 - ROSEBUD CR AT ROSEBUD SD (LAT 43 14 09 LONG 100 51 12)					
OCT , 1980					
03...	1005	5.2	13.5	17.0	340
29...	1215	9.7	8.0	6.0	350
NOV					
25...	1130	6.3	3.0	3.0	345
JAN , 1981					
21...	1210	4.7	1.0	5.0	370
MAR					
19...	1220	6.8	--	--	320
APR					
16...	1005	5.6	10.5	22.5	340
MAY					
14...	1220	6.1	15.5	22.5	330
JUN					
10...	1045	5.9	18.5	22.0	310
JUL					
08...	1045	5.1	21.5	23.5	--
AUG					
05...	1205	19	--	--	300
SEP					
02...	1215	4.3	21.5	29.0	--

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06449500 - LITTLE WHITE R NEAR ROSEBUD SD (LAT 43 19 32 LONG 100 53 00)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
03...	1010	67	14.0	17.0	290
29...	1125	88	7.0	4.0	300
NOV					
25...	1030	81	1.0	2.0	280
JAN , 1981					
21...	1050	68	.0	5.0	280
MAR					
19...	1115	95	--	--	290
APR					
16...	0850	78	10.0	16.0	300
MAY					
14...	1045	86	14.5	22.5	310
JUN					
10...	0935	82	17.5	22.0	320
JUL					
08...	1000	61	18.5	18.0	--
AUG					
05...	1110	169	--	--	310
SEP					
02...	1130	71	21.0	28.5	--

06450500 - LITTLE WHITE R BELOW WHITE RIVER SD (LAT 43 36 04 LONG 100 44 52)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
03...	1245	65	14.0	17.5	330
29...	1000	80	8.0	7.0	300
NOV					
25...	1300	115	2.5	4.0	--
JAN , 1981					
21...	1400	78	.0	10.0	310
MAR					
19...	1340	89	--	--	310
APR					
16...	1255	69	17.0	28.0	320
MAY					
14...	1345	61	16.0	23.0	330
JUN					
10...	1250	90	21.5	25.0	335
JUL					
08...	1230	58	22.0	23.0	--
AUG					
05...	1335	334	--	--	310
SEP					
02...	1400	57	24.5	30.5	--

06464500 - KEYA PAHA R AT WEWELA SD (LAT 43 01 42 LONG 099 46 45)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
02...	1045	12	10.0	9.5	417
30...	0745	24	3.5	.0	410
NOV					
26...	0730	16	3.0	2.5	445
JAN , 1981					
22...	0850	18	.0	-4.0	440
MAR					
20...	0720	34	--	--	400
APR					
16...	1550	34	19.0	30.0	430
MAY					
15...	0715	24	11.0	5.5	420
JUN					
10...	1645	22	28.5	29.0	430
JUL					
09...	0730	28	17.5	13.0	--
AUG					
06...	0825	24	--	--	400
SEP					
03...	0845	9.3	18.0	17.0	410

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06467500 - MISSOURI R AT YANKTON SD (LAT 42 51 58 LONG 097 23 37)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
21...	1545	35500	10.5	19.5	860
DEC					
17...	1515	17900	2.0	9.5	780
FEB , 1981					
19...	1425	14300	5.0	15.0	600
APR					
16...	1630	33400	11.5	30.5	860
MAY					
27...	1450	32300	17.5	26.0	720
JUN					
25...	1500	31100	21.0	26.0	850
SEP					
02...	1700	31400	22.0	25.5	850

06471200 - MAPLE R AT ND-SD STATE LINE (LAT 45 56 20 LONG 098 27 08)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
JUL , 1981					
21...	1320	43	24.5	21.0	340
AUG					
18...	1230	.02	25.5	24.5	640

06471500 - ELM R AT WESTPORT SD (LAT 45 39 22 LONG 098 29 48)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
08...	1455	.51	16.5	26.5	1020
NOV					
21...	0915	3.2	.0	-4.0	460
JAN , 1981					
08...	1050	4.6	.0	-7.0	1030
MAR					
04...	1020	2.5	1.0	1.0	860
APR					
03...	0915	6.6	8.0	9.0	760
MAY					
13...	1205	7.2	12.5	13.0	770
JUN					
17...	1000	.38	15.0	21.5	830
JUL					
21...	1545	89	27.5	32.0	780
AUG					
18...	1425	2.1	24.0	26.0	850
SEP					
24...	1120	4.7	15.0	17.5	670

06473000 - JAMES R AT ASHTON SD (LAT 45 00 02 LONG 098 28 57)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
NOV , 1980					
21...	1505	26	1.0	11.0	1120
JAN , 1981					
07...	1325	17	.5	7.0	830
MAR					
03...	1400	6.0	2.5	16.0	980
APR					
01...	1525	1.4	10.0	20.0	730
MAY					
12...	1150	5.9	11.0	19.0	1120
JUN					
16...	1502	.21	21.5	26.0	1300

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06474300 - MEDICINE CR NEAR ZELL SD (LAT 44 45 52 LONG 098 42 13)					
NOV , 1980					
19...	1135	.01	2.0	6.5	1850
MAR , 1981					
03...	1130	<.01	1.0	4.0	1560
APR					
03...	1300	.08	8.0	9.5	2200
MAY					
12...	0945	.02	9.0	6.5	1830
JUN					
16...	1050	E.01	16.0	24.0	1850
06475000 - JAMES R NEAR REDFIELD SD (LAT 44 55 13 LONG 098 25 52)					
OCT , 1980					
09...	0950	E.02	--	--	--
NOV					
19...	1300	1.3	3.0	13.5	1260
DEC					
31...	1325	20	--	6.0	1160
MAR , 1981					
05...	1245	8.9	2.0	6.0	840
APR					
06...	1310	18	10.0	18.0	750
MAY					
14...	1300	2.3	16.5	20.5	1030
JUN					
16...	1250	.14	21.5	28.0	1200
06477000 - JAMES R NEAR FORESTBURG SD (LAT 43 58 26 LONG 098 08 14)					
OCT , 1980					
08...	0815	.01	13.0	10.0	1500
NOV					
24...	1245	2.0	4.0	4.0	1950
DEC					
30...	1525	1.8	2.5	12.0	2650
FEB , 1981					
24...	1150	19	1.5	10.0	840
APR					
10...	1220	33	14.5	20.0	1450
MAY					
08...	1240	14	15.5	15.5	1480
JUN					
18...	1340	.53	24.5	23.0	1800
AUG					
06...	1430	.19	31.0	25.5	1730
SEP					
04...	0820	<.01	11.0	12.5	1520
06477500 - FIRESTEEL CR NEAR MOUNT VERNON SD (LAT 43 46 30 LONG 098 14 33)					
NOV , 1980					
24...	0930	.06	1.0	-5.0	3200
DEC					
30...	1140	.06	1.0	--	4000
FEB , 1981					
20...	1350	.34	1.5	20.0	830
APR					
10...	0955	.08	12.0	13.0	2430
MAY					
08...	1445	.01	22.0	19.0	2900
JUN					
18...	1045	<.01	16.5	21.0	3300
AUG					
06...	1140	.19	25.0	25.0	1690
SEP					
03...	1445	<.01	15.5	17.5	2600

< Less than.
E Estimated.

DATE	TIME	STREAMFLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
06478052 - ENEMY CR NEAR MITCHELL SD (LAT 43 36 33 LONG 097 59 09)					
APR , 1981					
09...	1500	.02	15.0	23.5	2700
06478390 - WOLF CR NEAR CLAYTON SD (LAT 43 22 18 LONG 097 36 12)					
OCT , 1980					
22...	1415	.46	11.0	20.0	2550
31...	1235	.82	7.0	8.5	2450
DEC					
18...	1230	1.3	.0	.5	2450
FEB , 1981					
20...	0935	1.6	.0	4.0	1950
APR					
09...	1220	2.4	--	--	2420
MAY					
26...	1210	.06	18.5	20.0	2200
SEP					
01...	1320	2.7	18.5	20.0	1400
06478515 - MISSOURI R NEAR GAYVILLE SD (LAT 42 51 01 LONG 097 13 12)					
OCT , 1980					
07...	1335	37600	16.5	25.0	740
APR , 1981					
21...	1235	33900	13.0	16.5	840
JUN					
09...	1335	32200	22.0	25.5	850
JUL					
21...	1515	35300	25.0	32.5	830
SEP					
01...	1535	32700	21.5	19.0	850
06478526 - MISSOURI R NEAR MASKELL NE (LAT 42 43 02 LONG 096 57 20)					
OCT , 1980					
08...	1415	36800	16.5	22.0	740
APR , 1981					
22...	1415	33500	12.5	14.0	870
JUN					
10...	1425	33000	22.0	26.0	850
JUL					
22...	1515	34800	25.0	27.5	840
SEP					
02...	1405	32500	22.0	27.0	860
06478690 - WEST FORK VERMILLION R NEAR PARKER SD (LAT 43 24 55 LONG 097 12 18)					
OCT , 1980					
20...	1210	.01	15.0	15.0	1400
NOV					
07...	1110	.01	12.5	18.5	1360
MAR , 1981					
17...	1130	.01	8.5	6.5	1340
APR					
21...	1300	.02	14.0	10.0	1350
MAY					
18...	1600	.01	19.5	21.0	1400
JUN					
23...	1120	.01	25.0	31.0	1370
JUL					
13...	1035	.17	28.0	27.5	1360
29...	1400	<.01	--	--	--

< Less than.

BEST DOCUMENT AVAILABLE

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06479000 - VERMILLION R NEAR WAKONDA SD (LAT 42 59 27 LONG 096 57 49)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
21...	1230	2.0	8.0	11.5	1200
DEC					
16...	1025	3.1	.0	3.5	1300
FEB , 1981					
18...	1605	88	.0	18.0	970
APR					
15...	1620	4.3	13.5	21.5	1400
MAY					
26...	1525	1.4	19.5	27.0	1110
JUN					
24...	1520	18	26.0	26.5	1060
AUG					
04...	1615	97	25.5	33.0	1210
SEP					
03...	1000	1.2	18.0	18.0	1480

06479098 - MISSOURI R NEAR PONCA NE (LAT 42 34 32 LONG 096 41 01)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
09...	1335	36200	16.0	21.5	800
APR , 1981					
23...	1205	32700	13.0	15.0	870
JUN					
11...	1245	31800	22.5	27.0	850
JUL					
23...	1210	33400	25.0	26.0	840
SEP					
03...	1455	31700	21.0	22.0	850

06479438 - BIG SIOUX R NEAR WATERTOWN SD (LAT 45 00 22 LONG 097 09 53)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
15...	0955	.06	5.0	4.0	500
NOV					
04...	0815	.22	3.0	1.0	560
JAN , 1981					
13...	1645	.09	.5	-1.0	550
MAR					
20...	0955	1.6	2.0	.0	800
APR					
24...	1105	4.8	10.5	14.5	670
MAY					
20...	0920	.13	14.5	15.0	850
JUN					
25...	0905	8.4	20.0	18.5	530
JUL					
16...	0945	.03	23.0	26.0	530
AUG					
21...	1100	.04	20.5	25.0	560

06479515 - WILLOW CR NEAR WATERTOWN SD (LAT 44 54 17 LONG 097 03 31)

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS) (00061)	TEMPERATURE (DEG C) (00010)	TEMPERATURE, AIR (DEG C) (00020)	SPECIFIC CONDUCTANCE (UMHOS) (00095)
OCT , 1980					
14...	1730	.25	7.0	7.0	1190
NOV					
03...	1715	.37	7.5	9.0	1000
JAN , 1981					
14...	1010	.20	2.0	-2.0	1300
MAR					
20...	0750	.41	1.5	-2.5	780
APR					
24...	0905	2.6	9.0	10.0	1040
MAY					
19...	1710	.20	21.5	23.5	940
JUN					
24...	1720	.43	25.0	24.0	1010
JUL					
15...	1330	.14	24.0	22.0	930

BEST DOCUMENT AVAILABLE

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06479525 - BIG SIOUX R NEAR CASTLEWOOD SD (LAT 44 43 54 LONG 097 02 39)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
14...	1300	5.4	6.5	10.5	980
NOV					
03...	1235	7.4	8.0	11.0	1000
JAN , 1981					
13...	1440	1.5	.0	12.5	1350
MAR					
19...	1410	21	2.0	6.0	1100
APR					
23...	1355	1.7	14.5	14.5	1100
MAY					
19...	1255	4.5	17.0	21.0	950
JUN					
24...	1450	7.1	27.0	25.0	1070
JUL					
15...	1115	6.6	22.0	21.0	760
AUG					
20...	1245	4.3	23.5	25.0	850

06479529 - STRAY HORSE CR NEAR CASTLEWOOD SD (LAT 44 43 52 LONG 096 57 23)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
14...	1445	.10	7.0	--	1140
NOV					
03...	1510	.06	8.0	14.0	1150
JAN , 1981					
13...	1215	.07	.5	2.5	1890
MAR					
19...	1105	.10	2.5	6.5	710
APR					
23...	1135	2.2	10.5	11.0	1000
MAY					
19...	1400	.08	23.0	23.0	990
JUN					
24...	1230	.30	22.5	24.5	1150
JUL					
15...	1005	.01	20.0	19.0	970
AUG					
20...	1100	.08	--	--	--

06479640 - HIDEWOOD CR NEAR ESTELLINE SD (LAT 44 36 42 LONG 096 58 17)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
15...	1225	.16	6.0	7.0	1150
NOV					
04...	1200	.51	--	5.0	1180
JAN , 1981					
14...	1210	.22	.0	-3.0	1500
MAR					
19...	0955	.86	1.5	3.0	860
APR					
23...	0935	2.4	7.5	6.0	1400
MAY					
20...	1210	.02	19.0	26.0	1060

MISCELLANEOUS TEMPERATURE MEASUREMENTS AND FIELD DETERMINATIONS

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
06479980 - MEDARY CREEK NEAR BROOKINGS, SD (LAT 44 13 27 LONG 096 46 06)					
OCT , 1980					
17...	0920	3.8	7.0	3.0	690
NOV					
04...	1415	2.6	7.0	13.0	720
JAN , 1981					
14...	1525	1.0	.5	-2.0	800
MAR					
18...	1625	3.7	5.0	4.0	690
APR					
22...	1350	15	11.0	13.5	840
MAY					
20...	1540	1.8	18.0	21.5	600
JUN					
24...	1135	1.3	--	21.0	--
JUL					
14...	1425	.10	27.0	26.0	760
AUG					
19...	1505	.69	21.5	22.0	770
SEP					
30...	1540	.16	13.5	12.0	790
06480000 - BIG SIOUX RIVER NEAR BROOKINGS SD (LAT 44 10 48 LONG 096 44 55)					
OCT , 1980					
15...	1630	20	7.0	10.0	1020
NOV					
06...	0925	26	6.0	18.0	570
JAN , 1981					
15...	1030	6.2	.0	-1.0	1160
MAR					
18...	1420	42	5.0	3.5	840
APR					
22...	1120	67	11.0	11.0	1050
MAY					
21...	0730	23	12.0	12.5	850
JUN					
24...	1000	22	21.5	21.0	950
JUL					
14...	1305	7.8	29.0	26.0	990
AUG					
19...	1255	19	21.5	24.0	900
SEP					
30...	1345	4.3	13.5	11.5	1180

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

06481500 - SKUNK CR AT SIOUX FALLS SD (LAT 43 32 01 LONG 096 47 26)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
20...	1440	1.9	11.0	25.0	970
NOV					
07...	0820	1.5	6.5	7.5	710
JAN , 1981					
15...	1655	1.1	.0	-7.0	1320
MAR					
17...	1555	1.8	9.0	6.0	780
APR					
21...	1535	4.6	15.0	19.0	1260
MAY					
19...	1440	.88	21.5	23.0	1150
JUN					
23...	1610	.51	26.0	33.0	1120
JUL					
13...	1335	.35	29.0	33.5	990
AUG					
18...	1420	.12	24.0	24.0	800
SEP					
29...	1350	.05	19.5	25.0	1020

06482610 - SPLITROCK CR AT CORSON SD (LAT 43 36 59 LONG 096 33 54)

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS) (00061)	TEMPER-ATURE (DEG C) (00010)	TEMPER-ATURE, AIR (DEG C) (00020)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)
OCT , 1980					
21...	1040	9.4	8.5	11.5	630
NOV					
06...	1330	12	7.5	19.0	450
JAN , 1981					
15...	1430	6.7	.0	-2.0	800
MAR					
18...	1100	14	4.0	2.0	540
APR					
14...	1305	23	12.0	7.5	740
MAY					
19...	1000	6.0	13.0	22.5	670
JUN					
23...	1330	9.3	24.0	31.5	540
JUL					
14...	1000	3.0	27.0	29.5	490
AUG					
19...	0915	7.8	19.0	13.0	560
SEP					
30...	0920	4.6	15.0	14.5	570

The following miscellaneous tables of water-quality data were retrieved from STORET for a network of surface water quality stations. The water samples were collected by USGS personnel and analyzed by the U.S. Army Corps of Engineers in Omaha, Nebraska.

In the body of the tables under the heading "DATE" the code CP(S)-F means that single grab samples were collected and then composited with a single sample.

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)

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     INITIAL DATE                       80/10/06  80/10/06  80/10/06  80/10/06  80/10/06  80/10/06  80/10/06  80/10/06
     INITIAL TIME-DEPTH-BOTTOM          1305 0000 1305 0001 1305 0003 1305 0009 1305 0016 1305 0022 1305 0029 1305 0036
00010 WATER      TEMP        CENT       14.2      14.0      13.9      13.5      13.5      13.4      13.4      13.4
00011 WATER      TEMP        FAHN       57.6      57.2      57.0      56.3      56.3      56.1      56.1      56.1
00020 AIR        TEMP        CENT       15.5
00025 BAROMTRC   PRESSURE    MM OF HG    726
00032 CLOUD      COVER       PERCENT      10
00035 WIND       VELOCITY    MPH         5.0
00036 WIND       DIR.FROM    NORTH-0     135
00077 TRANSP     SECCHI      INCHES       60
00094 CNDUCTVY   FIELD       MICROMHO    794       794       795       795       797       796       796       796
00299 DO         PROBE       MG/L        9.3       9.5       9.5       9.3       9.2       9.2       9.2       9.2
00301 DO         SATUR       PERCENT    89.4      91.3      91.3      89.4      88.5      86.8      86.8      86.8
00400 PH                     SU         8.30      8.20      8.20      8.20      8.20      8.20      8.20      8.20
     INITIAL DATE                       80/10/06  80/10/06  80/10/06  81/04/21  81/04/21  81/04/21  81/04/21  81/04/21
     INITIAL TIME-DEPTH-BOTTOM          1305 0042 1305 0049 1305 0005 1000 0000 1000 0001 1000 0009 1000 0016 1000 0022
     FINAL DATE                                             80/10/06
     FINAL TIME-NUMBER OF SAMPLES                           1325 6
     CP-SPACE OR TIME-STATISTICAL FUNC                      CP-S
00010 WATER      TEMP        CENT       13.2      13.1                 8.5       8.5       8.5       8.5       8.5
00011 WATER      TEMP        FAHN       55.8      55.6                47.3      47.3      47.3      47.3      47.3
00020 AIR        TEMP        CENT                                     13.0
00025 BAROMTRC   PRESSURE    MM OF HG                                  709
00032 CLOUD      COVER       PERCENT                                    30
00035 WIND       VELOCITY    MPH                                      25.0
00036 WIND       DIR.FROM    NORTH-0                                   180
00076 TURB       TRBIDMTR    HACH FTU                        6.0
00077 TRANSP     SECCHI      INCHES                                     30
00094 CNDUCTVY   FIELD       MICROMHO    796       796                 734       734       734       734       735
00299 DO         PROBE       MG/L        9.0       8.9                10.7      10.7      10.7      10.7      10.7
00301 DO         SATUR       PERCENT    84.9      84.0                92.2      92.2      92.2      92.2      92.2
00400 PH                     SU         8.20      8.20                8.30      8.30      8.30      8.30      8.30
00410 T ALK      CACO3       MG/L                            174
00515 RESIDUE    DISS-105    C MG/L                          532
00530 RESIDUE    TOT NFLT    MG/L                             14
00610 NH3+NH4-   N TOTAL     MG/L                          0.020
00619 UN-IONZD   NH3-NH3     MG/L                          0.000
00620 NO3-N      TOTAL       MG/L                          0.000
00665 PHOS-TOT               MG/L P                        0.020
00900 TOT HARD   CACO3       MG/L                            268
00916 CALCIUM    CA-TOT      MG/L                           60.0
00927 MGNSIUM    MG,TOT      MG/L                           29.0
00940 CHLORIDE   TOTAL       MG/L                              9
00945 SULFATE    SO4-TOT     MG/L                            233
32216 CHLRPHYL   TOTAL       UG/L                           8.00
60050 ALGAE      TOTAL       /ML                           93400
70507 PHOS-T     ORTHO       MG/L P                        0.000
71000 ABUNDANT   ALGCOUNT    1ST DOM                       67300
71001 ABUNDANT   ALGCOUNT    2ND DOM                       19300
71002 ABUNDANT   ALGCOUNT    3RD DOM                        5700
71003 ABUNDANT   ALGCOUNT    4TH DOM                        1100
71010 ABUNDANT   ALGGENUS    1ST DOM                          69
71011 ABUNDANT   ALGGENUS    2ND DOM                          71
71012 ABUNDANT   ALGGENUS    3RD DOM                          77
71013 ABUNDANT   ALGGENUS    4TH DOM                          84
71900 MERCURY    HG,TOTAL    UG/L                            0.0
     INITIAL DATE                       81/04/21  81/04/21  81/04/21  81/05/18  81/05/18  81/05/18  81/05/18  81/05/18
     INITIAL TIME-DEPTH-BOTTOM          1000 0029 1000 0036 1000 0005 1540 0000 1540 0001 1540 0003 1540 0009 1540 0016
     FINAL DATE                                             81/04/21
     FINAL TIME-NUMBER OF SAMPLES                           1020 6
     CP-SPACE OR TIME-STATISTICAL FUNC                      CP-S
00010 WATER      TEMP        CENT        8.4       8.4                13.3      13.3      13.3      12.8      12.2
00011 WATER      TEMP        FAHN       47.1      47.1                55.9      55.9      55.9      55.0      54.0
00020 AIR        TEMP        CENT                                     24.0
00025 BAROMTRC   PRESSURE    MM OF HG                                    7
00032 CLOUD      COVER       PERCENT                                    70
00035 WIND       VELOCITY    MPH                                      12.0
00036 WIND       DIR.FROM    NORTH-0                                   315
00076 TURB       TRBIDMTR    HACH FTU                        3.0
00077 TRANSP     SECCHI      INCHES                                     36
00094 CNDUCTVY   FIELD       MICROMHO    735       735                 746       744       746       743       746
00299 DO         PROBE       MG/L       10.7      10.6                 9.5       9.6       9.6       9.6       9.5
00301 DO         SATUR       PERCENT    89.9      89.1                89.6      90.6      90.6      90.6      88.0
00400 PH                     SU         8.30      8.30                8.30      8.30      8.30      8.20      8.30
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LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)--Continued

INITIAL DATE	81/04/21	81/04/21	81/04/21	81/05/18	81/05/18	81/05/18	81/05/18	81/05/18
INITIAL TIME-DEPTH-BOTTOM	1000 0029	1000 0036	1000 0005	1540 0000	1540 0001	1540 0003	1540 0009	1540 0016
FINAL DATE			81/04/21					
FINAL TIME-NUMBER OF SAMPLES			1020 6					
CP-SPACE OR TIME-STATISTICAL FUNC			CP-S					
00410 T ALK CACO3 MG/L			176					
00515 RESIDUE DISS-105 C MG/L			490					
00530 RESIDUE TOT NFLT MG/L			6					
00610 NH3+NH4- N TOTAL MG/L			0.040					
00619 UN-IONZD NH3-NH3 MG/L			0.000					
00620 NO3-N TOTAL MG/L			0.000					
00665 PHOS-TOT MG/L P			0.050					
00720 CYANIDE CN-TOT MG/L			0.000					
00900 TOT HARD CACO3 MG/L			242					
00916 CALCIUM CA-TOT MG/L			56.0					
00927 MGNSIUM MG,TOT MG/L			25.0					
00929 SODIUM NA,TOT MG/L			70.00					
00931 SODIUM ADSBTION RATIO			1.9					
00940 CHLORIDE TOTAL MG/L			10					
00945 SULFATE SO4-TOT MG/L			220					
01002 ARSENIC AS,TOT UG/L			1					
01012 BERYLIUM BE,TOT UG/L			0.00					
01022 BORON B,TOT UG/L			400					
01027 CADMIUM CD,TOT UG/L			3					
01034 CHROMIUM CR,TOT UG/L			0					
01042 COPPER CU,TOT UG/L			3					
01045 IRON FE,TOT UG/L			453					
01051 LEAD PB,TOT UG/L			0					
01055 MANGNESE MN UG/L			25.0					
01067 NICKEL NI,TOTAL UG/L			11					
01077 SILVER AG,TOT UG/L			0.0					
01092 ZINC ZN,TOT UG/L			30					
01105 ALUMINUM AL,TOT UG/L			700					
01132 LITHIUM LI,TOT UG/L			38					
01147 SELENIUM SE,TOT UG/L			0					
32230 CHLRPHYL A MG/L			0.020					
39516 PCBS WHL SMPL UG/L			0.000					
70507 PHOS-T ORTHO MG/L P			0.000					
71900 MERCURY HG,TOTAL UG/L			0.3					

INITIAL DATE	81/05/18	81/05/18	81/05/18	81/05/18	81/05/18	81/05/18	81/06/16	81/06/16
INITIAL TIME-DEPTH-BOTTOM	1540 0022	1540 0029	1540 0036	1540 0042	1540 0049	1605 0005	0730 0000	0730 0001
FINAL DATE						81/05/18		
FINAL TIME-NUMBER OF SAMPLES						1620 6		
CP-SPACE OR TIME-STATISTICAL FUNC						CP-S		
00010 WATER TEMP CENT	12.0	12.0	12.0	12.0	11.9		17.1	17.1
00011 WATER TEMP FAHN	53.6	53.6	53.6	53.6	53.4		62.8	62.8
00020 AIR TEMP CENT							12.5	
00025 BAROMTRC PRESSURE MM OF HG							721	
00032 CLOUD COVER PERCENT							0	
00035 WIND VELOCITY MPH							8.0	
00036 WIND DIR.FROM NORTH-0							270	
00076 TURB TRBIDMTR HACH FTU						4.0		
00077 TRANSP SECCHI INCHES							24	
00094 CNDUCTVY FIELD MICROMHO	746	747	747	747	747		730	730
00299 DO PROBE MG/L	9.3	9.3	9.3	9.3	9.3		8.0	8.0
00301 DO SATUR PERCENT	86.1	86.1	86.1	86.1	86.1		82.5	82.5
00400 PH SU	8.30	8.20	8.20	8.20	8.20		8.20	8.20
00410 T ALK CACO3 MG/L						169		
00515 RESIDUE DISS-105 C MG/L						464		
00530 RESIDUE TOT NFLT MG/L						14		
00610 NH3+NH4- N TOTAL MG/L						0.010		
00619 UN-IONZD NH3-NH3 MG/L						0.000		
00620 NO3-N TOTAL MG/L						0.000		
00665 PHOS-TOT MG/L P						0.030		
00900 TOT HARD CACO3 MG/L						244		
00916 CALCIUM CA-TOT MG/L						58.0		
00927 MGNSIUM MG,TOT MG/L						24.0		
00940 CHLORIDE TOTAL MG/L						12		
00945 SULFATE SO4-TOT MG/L						192		
32216 CHLRPHYL TOTAL UG/L						48.00		
70507 PHOS-T ORTHO MG/L P						0.000		
71900 MERCURY HG,TOTAL UG/L						0.5		

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)--Continued

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     INITIAL DATE                      81/06/16  81/06/16  81/06/16  81/06/16  81/06/16  81/06/16  81/06/16  81/06/16
     INITIAL TIME-DEPTH-BOTTOM         0730 0003 0730 0009 0730 0016 0730 0022 0730 0029 0730 0036 0730 0042 0730 0044
00010 WATER     TEMP      CENT         17.2      17.2      17.2      17.2      17.2      17.3      17.3      17.3
00011 WATER     TEMP      FAHN         63.0      63.0      63.0      63.0      63.0      63.1      63.1      63.1
00094 CNDUCTVY  FIELD     MICROMHO      730       729       729       729       729       729       729       728
00299 DO        PROBE     MG/L          8.0       8.0       8.0       8.0       8.0       8.0       7.9       7.9
00301 DO        SATUR     PERCENT      82.5      82.5      82.5      82.5      82.5      82.5      81.4      81.4
00400 PH                  SU           8.20      8.20      8.20      8.20      8.20      8.20      8.30      8.30
     INITIAL DATE                      81/06/16  81/06/16  81/06/22  81/06/23  81/06/23  81/06/23  81/07/13  81/07/13
     INITIAL TIME-DEPTH-BOTTOM         0730 0005 0755 0005 1330 0005 1330 0000 1330 0049 1330 0005 1450 0000 1450 0001
     FINAL DATE                        81/06/16  81/06/16  81/06/22                      81/06/23
     FINAL TIME-NUMBER OF SAMPLES      0755 G    0810 G    1345 G                        1340 G
     CP-SPACE OR TIME-STATISTICAL FUNC CP-S      CP-S      CP-S                          CP-S
00010 WATER     TEMP      CENT                                       15.5      15.5                23.0      23.0
00011 WATER     TEMP      FAHN                                       59.9      59.9                73.4      73.4
00020 AIR       TEMP      CENT                                       24.0                          25.5
00025 BAROMTRC  PRESSURE  MM OF HG                                                                  722
00032 CLOUD     COVER     PERCENT                                      20                           100
00035 WIND      VELOCITY  MPH                                         3.0                           8.0
00036 WIND      DIR.FROM  NORTH-0                                     360                           135
00062 WATER     SURF ELE  IN FEET                                  1695.6
00076 TURB      TRBIDMTR  HACH FTU     10.0
00077 TRANSP    SECCHI    INCHES                                                                     30
00094 CNDUCTVY  FIELD     MICROMHO                                                                  742       742
00299 DO        PROBE     MG/L                                                                      6.9       6.9
00301 DO        SATUR     PERCENT                                                                  79.3      79.3
00400 PH                  SU                                                                       8.30      8.30
00410 T ALK     CACO3     MG/L          165
00515 RESIDUE   DISS-105 C MG/L         512
00530 RESIDUE   TOT NFLT  MG/L           18
00610 NH3+NH4-  N TOTAL   MG/L        0.000                                             0.050
00619 UN-IONZD  NH3-NH3   MG/L        0.000                                             0.000
00620 NO3-N     TOTAL     MG/L        0.000                                             0.000
00665 PHOS-TOT            MG/L P      0.010                                             0.050
00900 TOT HARD  CACO3     MG/L          255
00916 CALCIUM   CA-TOT    MG/L         56.0
00927 MGNSIUM   MG,TOT    MG/L         28.0
00940 CHLORIDE  TOTAL     MG/L           10
00945 SULFATE   SO4-TOT   MG/L          220
32216 CHLRPHYL  TOTAL     UG/L                   6.00      7.00
70507 PHOS-T    ORTHO     MG/L P      0.000                                             0.010
71900 MERCURY   HG,TOTAL  UG/L          0.3
     INITIAL DATE                      81/07/13  81/07/13  81/07/13  81/07/13  81/07/13  81/07/13  81/07/13  81/07/13
     INITIAL TIME-DEPTH-BOTTOM         1450 0003 1450 0009 1450 0016 1450 0022 1450 0029 1450 0036 1450 0042 1450 0046
00010 WATER     TEMP      CENT         23.0      23.0      23.0      22.9      22.6      22.4      22.4      22.4
00011 WATER     TEMP      FAHN         73.4      73.4      73.4      73.2      72.7      72.3      72.3      72.3
00094 CNDUCTVY  FIELD     MICROMHO      742       742       742       742       742       742       742       742
00299 DO        PROBE     MG/L          6.9       6.9       6.9       6.8       6.6       6.4       6.4       6.3
00301 DO        SATUR     PERCENT      79.3      79.3      79.3      78.2      75.9      72.7      72.7      71.6
00400 PH                  SU           8.30      8.30      8.30      8.30      8.30      8.30      8.30      8.30
     INITIAL DATE                      81/07/13  81/08/06  81/08/06  81/08/06  81/08/06  81/08/06  81/08/06  81/08/10
     INITIAL TIME-DEPTH-BOTTOM         1450 0005 1030 0000 1030 0006 1030 0016 1030 0032 1030 0065 1030 0005 1130 0000
     FINAL DATE                        81/07/13                                                    81/08/06
     FINAL TIME-NUMBER OF SAMPLES      1520 G                                                      1100 G
     CP-SPACE OR TIME-STATISTICAL FUNC CP-S                                                        CP-S
00010 WATER     TEMP      CENT                   20.5      21.0      21.0      21.0      18.0                22.2
00011 WATER     TEMP      FAHN                   68.9      69.8      69.8      69.8      64.4                72.0
00020 AIR       TEMP      CENT                   21.0                                                        19.8
00025 BAROMTRC  PRESSURE  MM OF HG                                                                            727
00032 CLOUD     COVER     PERCENT                   5                                                          40
00035 WIND      VELOCITY  MPH                    20.0                                                         5.0
00036 WIND      DIR.FROM  NORTH-0                 360                                                         225
00062 WATER     SURF ELE  IN FEET        1595.4
00077 TRANSP    SECCHI    INCHES                                                                               42
00094 CNDUCTVY  FIELD     MICROMHO                                                                            757
00299 DO        PROBE     MG/L                                                                                7.6
00301 DO        SATUR     PERCENT                                                                            86.4
00400 PH                  SU                                                                                 8.10
32216 CHLRPHYL  TOTAL     UG/L         7.00                                                       63.00
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MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR POLLOCK, SD (LAT 45 51 58 LONG 100 21 52)--Continued

	INITIAL DATE			81/08/10	81/08/10	81/08/10	81/08/10	81/08/10	81/08/10	81/08/10	81/08/10
	INITIAL TIME-DEPTH-BOTTOM			1130 0001	1130 0003	1130 0009	1130 0016	1130 0022	1130 0029	1130 0036	1130 0042
00010	WATER	TEMP	CENT	22.0	22.0	21.7	21.6	21.4	21.4	21.4	21.4
00011	WATER	TEMP	FAHN	71.6	71.6	71.1	70.9	70.5	70.5	70.5	70.5
00094	CNDUCTVY	FIELD	MICROMHO	758	757	757	757	756	757	757	757
00299	DO	PROBE	MG/L	7.7	7.7	7.6	7.5	7.5	7.3	7.3	7.2
00301	DO	SATUR	PERCENT	87.5	87.5	86.4	85.2	83.3	81.1	81.1	80.0
00400	PH		SU	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10
	INITIAL DATE			81/08/10	81/08/10	81/09/03	81/09/03	81/09/03	81/09/03		
	INITIAL TIME-DEPTH-BOTTOM			1130 0045	1130 0005	1100 0000	1100 0022	1100 0045	1100 0065		
	FINAL DATE				81/08/10				81/09/03		
	FINAL TIME-NUMBER OF SAMPLES				1205 6				1145 6		
	CP-SPACE OR TIME-STATISTICAL FUNC				CP-S				CP-S		
00010	WATER	TEMP	CENT	21.3		19.0	19.0	19.0			
00011	WATER	TEMP	FAHN	70.3		66.2	66.2	66.2			
00020	AIR	TEMP	CENT			15.5					
00032	CLOUD	COVER	PERCENT			45					
00035	WIND	VELOCITY	MPH			7.0					
00036	WIND	DIR.FROM	NORTH=0			0					
00062	WATER	SURF ELE	IN FEET			1593.9					
00095	CNDUCTVY	FIELD	MICROMHO	757							
00299	DO	PROBE	MG/L	6.8							
00301	DO	SATUR	PERCENT	75.6							
00400	PH		SU	8.00							
32216	CHLRPHYL	TOTAL	UG/L		19.00				36.00		

SPRING CREEK BASIN

LAKE POCASSE AT POLLOCK, SD (LAT 45 54 30 LONG 100 17 30)

INITIAL DATE	80/10/06	80/10/06	80/10/06	80/10/06	80/10/06	80/10/06	81/04/21	81/04/21
INITIAL TIME-DEPTH-BOTTOM	1435 0000	1435 0001	1435 0003	1435 0009	1435 0014	1450 0005	1145 0000	1145 0001
FINAL DATE						80/10/06		
FINAL TIME-NUMBER OF SAMPLES						1510 6		
CP-SPACE OR TIME-STATISTICAL FUNC						CP-S		
00010 WATER TEMP CENT	14.1	14.0	13.9	13.4	13.4		10.3	10.3
00011 WATER TEMP FAHN	57.4	57.2	57.0	56.1	56.1		50.5	50.5
00020 AIR TEMP CENT	17.0						15.0	
00025 BAROMTRC PRESSURE MM OF HG	726						709	
00032 CLOUD COVER PERCENT	10						40	
00035 WIND VELOCITY MPH	10.0						25.0	
00036 WIND DIR.FROM NORTH-0	135						270	
00076 TURB TRBIDMTR HACH FTU						37.0		
00077 TRANSP SECCHI INCHES	6						12	
00094 CNDUCTVY FIELD MICROMHO	1082	1082	1082	1081	1082		1097	1097
00299 DO PROBE MG/L	9.3	9.3	9.3	9.1	8.5		10.0	10.0
00301 DO SATUR PERCENT	89.4	89.4	89.4	85.8	80.2		88.5	88.5
00400 PH SU	8.60	8.60	8.60	8.50	8.50		8.70	8.70
00410 T ALK CACO3 MG/L						382		
00515 RESIDUE DISS-105 C MG/L						738		
00530 RESIDUE TOT NFLT MG/L						58		
00610 NH3+NH4- N TOTAL MG/L						0.030		
00619 UN-IONZD NH3-NH3 MG/L						0.000		
00620 NO3-N TOTAL MG/L						0.000		
00665 PHOS-TOT MG/L P						0.300		
00900 TOT HARD CACO3 MG/L						314		
00916 CALCIUM CA-TOT MG/L						56.0		
00927 MGNSIUM MG,TOT MG/L						43.0		
00940 CHLORIDE TOTAL MG/L						33		
00945 SULFATE SO4-TOT MG/L						190		
32216 CHLRPHYL TOTAL UG/L						9.00		
60050 ALGAE TOTAL /ML						3930		
70507 PHOS-T ORTHO MG/L P						0.120		
71000 ABUNDANT ALGCOUNT 1ST DOM						2500		
71001 ABUNDANT ALGCOUNT 2ND DOM						1430		
71010 ABUNDANT ALGGENUS 1ST DOM						71		
71011 ABUNDANT ALGGENUS 2ND DOM						69		
71900 MERCURY HG,TOTAL UG/L						0.0		

INITIAL DATE	81/04/21	81/04/21	81/04/21	81/04/21	81/05/26	81/05/26	81/05/26	81/05/26
INITIAL TIME-DEPTH-BOTTOM	1145 0003	1145 0009	1145 0013	1145 0005	1312 0000	1312 0001	1312 0003	1312 0009
FINAL DATE				81/04/21				
FINAL TIME-NUMBER OF SAMPLES				1200 6				
CP-SPACE OR TIME-STATISTICAL FUNC				CP-S				
00010 WATER TEMP CENT	10.3	10.2	10.2		12.7	11.4	11.3	11.2
00011 WATER TEMP FAHN	50.5	50.4	50.4		54.9	52.5	52.3	52.2
00020 AIR TEMP CENT					17.5			
00025 BAROMTRC PRESSURE MM OF HG					721			
00032 CLOUD COVER PERCENT					100			
00076 TURB TRBIDMTR HACH FTU				14.0				
00077 TRANSP SECCHI INCHES					17			
00094 CNDUCTVY FIELD MICROMHO	1097	1097	1098		1190	1190	1192	1193
00299 DO PROBE MG/L	10.0	10.0	10.0		9.7	9.2	8.9	8.7
00301 DO SATUR PERCENT	88.5	88.5	88.5		91.5	82.9	80.2	70.4
00400 PH SU	8.70	8.70	8.70		8.70	8.60	8.60	8.60
00410 T ALK CACO3 MG/L				396				
00515 RESIDUE DISS-105 C MG/L				722				
00530 RESIDUE TOT NFLT MG/L				74				
00610 NH3+NH4- N TOTAL MG/L				0.040				
00619 UN-IONZD NH3-NH3 MG/L				0.000				
00620 NO3-N TOTAL MG/L				0.000				
00665 PHOS-TOT MG/L P				0.320				
00720 CYANIDE CN-TOT MG/L				0.000				
00900 TOT HARD CACO3 MG/L				322				
00916 CALCIUM CA-TOT MG/L				56.0				
00927 MGNSIUM MG,TOT MG/L				44.0				
00929 SODIUM NA,TOT MG/L				134.00				
00931 SODIUM ADSBTION RATIO				3.3				
00940 CHLORIDE TOTAL MG/L				37				
00945 SULFATE SO4-TOT MG/L				170				
01002 ARSENIC AS,TOT UG/L				5				
01012 BERYLIUM BE,TOT UG/L				0.00				
01022 BORON B,TOT UG/L				210				
01027 CADMIUM CD,TOT UG/L				1				
01034 CHROMIUM CR,TOT UG/L				0				
01042 COPPER CU,TOT UG/L				3				
01045 IRON FE,TOT UG/L				2000				
01051 LEAD PB,TOT UG/L				0				
01055 MANGNESE MN UG/L				301.0				
01067 NICKEL NI,TOTAL UG/L				15				
01077 SILVER AG,TOT UG/L				0.0				
01092 ZINC ZN,TOT UG/L				23				
01105 ALUMINUM AL,TOT UG/L				1671				
01132 LITHIUM LI,TOT UG/L				71				
01147 SELENIUM SE,TOT UG/L				0				
32230 CHLRPHYL A MG/L				0.047				

MISCELLANEOUS WATER QUALITY DATA

SPRING CREEK BASIN

LAKE POCASSE AT POLLOCK, SD (LAT 45 54 30 LONG 100 17 30)--Continued

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      INITIAL DATE                      81/04/21  81/04/21  81/04/21  81/04/21  81/05/26  81/05/26  81/05/26  81/05/26
      INITIAL TIME-DEPTH-BOTTOM         1145 0003 1145 0009 1145 0013 1145 0005 1312 0000 1312 0001 1312 0003 1312 0009
      FINAL DATE                                                    81/04/21
      FINAL TIME-NUMBER OF SAMPLES                                  1200 G
      CP-SPACE OR TIME-STATISTICAL FUNC                             CP-S
70507 PHOS-T    ORTHO     MG/L P                                    0.180
71900 MERCURY   HG,TOTAL  UG/L                                      0.4
      INITIAL DATE                      81/05/26  81/05/26  81/06/15  81/06/15  81/06/15  81/06/15  81/06/15  81/06/15
      INITIAL TIME-DEPTH-BOTTOM         1312 0013 1330 0005 1248 0000 1248 0001 1248 0003 1248 0009 1248 0012 1248 0005
      FINAL DATE                                  81/05/26                                                    81/06/15
      FINAL TIME-NUMBER OF SAMPLES                1345 G                                                      1310 G
      CP-SPACE OR TIME-STATISTICAL FUNC           CP-S                                                        CP-S
00010 WATER     TEMP      CENT          11.2                17.9      17.9      18.2      18.1      17.9
00011 WATER     TEMP      FAHN          52.2                64.2      64.2      64.8      64.6      64.2
00020 AIR       TEMP      CENT                              16.0
00025 BAROMTRC  PRESSURE  MM OF HG                          716
00032 CLOUD     COVER     PERCENT                           80
00035 WIND      VELOCITY  MPH                               25.0
00036 WIND      DIR.FROM  NORTH-0                           270
00076 TURB      TRBIDMTR  HACH FTU                9.0                                                         42.0
00077 TRANSP    SECCHI    INCHES                            12
00094 CNDUCTVY  FIELD     MICROMHO      1194                1178      1177      1179      1179      1179
00299 DO        PROBE     MG/L          8.6                 7.4       7.3       7.3       7.2       7.3
00301 DO        SATUR     PERCENT       77.5                77.9      76.8      76.8      75.8      76.8
00400 PH                  SU            8.60                8.50      8.50      8.50      8.50      8.50
00410 T ALK     CACO3     MG/L                    417                                                         405
00515 RESIDUE   DISS-105  C MG/L                  806                                                         856
00530 RESIDUE   TOT NFLT  MG/L                    36                                                          107
00610 NH3+NH4-  N TOTAL   MG/L                    0.100                                                       0.030
00619 UN-IONZD  NH3-NH3   MG/L                    0.010                                                       0.000
00620 NO3-N     TOTAL     MG/L                    0.030                                                       0.000
00665 PHOS-TOT            MG/L P                  0.320                                                       0.450
00900 TOT HARD  CACO3     MG/L                    340                                                         340
00916 CALCIUM   CA-TOT    MG/L                    59.0                                                        56.0
00927 MGNSIUM   MG,TOT    MG/L                    47.0                                                        49.0
00940 CHLORIDE  TOTAL     MG/L                    40                                                          41
00945 SULFATE   SO4-TOT   MG/L                    193                                                         227
32216 CHLRPHYL  TOTAL     UG/L                    9.00
70507 PHOS-T    ORTHO     MG/L P                  0.210                                                       0.190
71900 MERCURY   HG,TOTAL  UG/L                    0.2                                                         0.0
      INITIAL DATE                      81/06/15  81/07/13  81/07/13  81/07/13  81/07/13  81/07/13  81/07/13  81/08/10
      INITIAL TIME-DEPTH-BOTTOM         1310 0005 1630 0000 1630 0001 1630 0003 1630 0009 1630 0013 1630 0005 1335 0000
      FINAL DATE                        81/06/15                                                    81/07/13
      FINAL TIME-NUMBER OF SAMPLES      1325 G                                                      1650 G
      CP-SPACE OR TIME-STATISTICAL FUNC CP-S                                                        CP-S
00010 WATER     TEMP      CENT                    24.4      24.4      24.4      24.3      24.2                23.0
00011 WATER     TEMP      FAHN                    75.9      75.9      75.9      75.7      75.6                73.4
00020 AIR       TEMP      CENT                    25.0                                                        27.5
00025 BAROMTRC  PRESSURE  MM OF HG                722                                                         727
00032 CLOUD     COVER     PERCENT                 100                                                         40
00035 WIND      VELOCITY  MPH                     10.0                                                        5.0
00036 WIND      DIR.FROM  NORTH-0                 135                                                         225
00077 TRANSP    SECCHI    INCHES                  6                                                           12
00094 CNDUCTVY  FIELD     MICROMHO                1214      1214      1214      1207      1204                862
00299 DO        PROBE     MG/L                    6.3       6.3       6.3       6.4       6.4                 6.9
00301 DO        SATUR     PERCENT                 74.1      74.1      74.1      75.3      75.3                79.3
00400 PH                  SU                      8.60      8.60      8.60      8.60      8.60                8.10
32216 CHLRPHYL  TOTAL     UG/L          34.00                                                       26.00
      INITIAL DATE                      81/08/10  81/08/10  81/08/10  81/08/10  81/08/10
      INITIAL TIME-DEPTH-BOTTOM         1335 0001 1335 0003 1335 0009 1335 0016 1335 0005
      FINAL DATE                                                                81/08/10
      FINAL TIME-NUMBER OF SAMPLES                                              1350 G
      CP-SPACE OR TIME-STATISTICAL FUNC                                         CP-S
00010 WATER     TEMP      CENT          23.0      22.9      22.6      22.4
00011 WATER     TEMP      FAHN          73.4      73.2      72.7      72.3
00094 CNDUCTVY  FIELD     MICROMHO      863       863       863       862
00299 DO        PROBE     MG/L          6.9       6.9       6.5       6.3
00301 DO        SATUR     PERCENT       79.3      79.3      74.7      71.6
00400 PH                  SU            8.10      8.10      8.10      8.10
32216 CHLRPHYL  TOTAL     UG/L                                                  37.00
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CHEYENNE RIVER BASIN

COLD BROOK RESERVOIR AT HOT SPRINGS, SD (LAT 43 27 19 LONG 103 29 19)

INITIAL DATE	81/02/12	81/02/12	81/02/12	81/02/12	81/02/12	81/02/12	81/02/12	81/02/12
INITIAL TIME-DEPTH-BOTTOM	1100 0000	1100 0001	1100 0003	1100 0009	1100 0016	1100 0022	1100 0031	1100 0005
FINAL DATE								81/02/12
FINAL TIME-NUMBER OF SAMPLES								1145 G
CP-SPACE OR TIME-STATISTICAL FUNC								CP-S
00010 WATER TEMP CENT	3.0	3.9	3.9	3.9	3.9	3.9	34.0	
00011 WATER TEMP FAHN	38.5	39.0	39.0	39.0	39.0	39.0	93.2	
00020 AIR TEMP CENT	1.0-							
00025 BAROMTRC PRESSURE MM OF HG	679							
00032 CLOUD COVER PERCENT	5							
00035 WIND VELOCITY MPH	0.0							
00036 WIND DIR.FROM NORTH=0	0							
00076 TURB TRBIDMTR HACH FTU								3.0
00077 TRANSP SECCHI INCHES	384							
00094 CNDUCTVY FIELD MICROMHO	510	516	515	517	520	521	523	
00299 DO PROBE MG/L	12.0	12.0	12.1	12.0	11.9	11.6	11.3	
00301 DO SATUR PERCENT	91.6	91.6	92.4	91.6	90.8	88.5	159.2	
00400 PH SU	7.90	8.00	8.00	8.00	8.00	8.00	8.00	
00410 T ALK CACO3 MG/L								189
00515 RESIDUE DISS-105 C MG/L								306
00530 RESIDUE TOT NFLT MG/L								4
00610 NH3+NH4- N TOTAL MG/L								0.010
00619 UN-IONZD NH3-NH3 MG/L								0.000
00620 NO3-N TOTAL MG/L								0.070
00665 PHOS-TOT MG/L P								0.000
00720 CYANIDE CN-TOT MG/L								0.000
00900 TOT HARD CACO3 MG/L								249
00916 CALCIUM CA-TOT MG/L								50.0
00927 MGNSIUM MG,TOT MG/L								30.0
00929 SODIUM NA,TOT MG/L								43.00
00940 CHLORIDE TOTAL MG/L								26
00945 SULFATE SO4-TOT MG/L								57
01002 ARSENIC AS,TOT UG/L								6
01012 BERYLIUM BE,TOT UG/L								0.00
01022 BORON B,TOT UG/L								210
01027 CADMIUM CD,TOT UG/L								3
01034 CHROMIUM CR,TOT UG/L								13
01042 COPPER CU,TOT UG/L								0
01045 IRON FE,TOT UG/L								85
01051 LEAD PB,TOT UG/L								0
01055 MANGNESE MN UG/L								2.0
01067 NICKEL NI,TOTAL UG/L								14
01077 SILVER AG,TOT UG/L								0.0
01092 ZINC ZN,TOT UG/L								36
01105 ALUMINUM AL,TOT UG/L								106
01147 SELENIUM SE,TOT UG/L								2
32216 CHLRPHYL TOTAL UG/L								2.00
39516 PCBS WHL SMPL UG/L								0.000
70507 PHOS-T ORTHO MG/L P								0.000
71900 MERCURY HG,TOTAL UG/L								0.0

CHEYENNE RIVER BASIN

COLD BROOK RESERVOIR AT HOT SPRINGS, SD (LAT 43 27 19 LONG 103 29 19)--Continued

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     INITIAL DATE                      81/04/13  81/04/13  81/04/13  81/04/13  81/04/13  81/04/13  81/04/13  81/04/13
     INITIAL TIME-DEPTH-BOTTOM        1000 0000 1000 0001 1000 0003 1000 0009 1000 0016 1000 0022 1000 0026 1000 0005
     FINAL DATE                                                                                               81/04/13
     FINAL TIME-NUMBER OF SAMPLES                                                                             1045 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                                                        CP-S
00010 WATER     TEMP       CENT            11.4      11.3      11.3      11.3      11.3      10.4      10.3
00011 WATER     TEMP       FAHN            52.5      52.3      52.3      52.3      52.3      50.7      50.5
00020 AIR       TEMP       CENT            12.0
00025 BAROMTRC  PRESSURE   MM OF HG          27
00032 CLOUD     COVER      PERCENT           70
00035 WIND      VELOCITY   MPH             12.0
00036 WIND      DIR.FROM   NORTH-0           25
00076 TURB      TRBIDMTR   HACH FTU                                                                             1.0
00077 TRANSP    SECCHI     INCHES           312
00094 CNDUCTVY  FIELD      MICROMHO         500       500       500       501       501       498       499
00299 DO        PROBE      MG/L            11.2      11.2      11.2      11.2      11.2      11.9      12.0
00301 DO        SATUR      PERCENT        100.9     100.9     100.9     100.9     100.9     105.3     106.2
00400 PH                   SU              8.20      8.20      8.20      8.20      8.20      8.20      8.20
00410 T ALK     CACO3      MG/L                                                                                 187
00515 RESIDUE   DISS-105 C MG/L                                                                                 340
00530 RESIDUE   TOT NFLT   MG/L                                                                                  10
00610 NH3+NH4-  N TOTAL    MG/L                                                                               0.020
00619 UN-IONZD  NH3-NH3    MG/L                                                                               0.000
00620 NO3-N     TOTAL      MG/L                                                                               0.020
00665 PHOS-TOT             MG/L P                                                                             0.010
00900 TOT HARD  CACO3      MG/L                                                                                 222
00916 CALCIUM   CA-TOT     MG/L                                                                                45.0
00927 MGNSIUM   MG,TOT     MG/L                                                                                27.0
00940 CHLORIDE  TOTAL      MG/L                                                                                  26
00945 SULFATE   SO4-TOT    MG/L                                                                                  51
32230 CHLRPHYL  A          MG/L                                                                               0.000
70507 PHOS-T    ORTHO      MG/L P                                                                             0.000
71900 MERCURY   HG,TOTAL   UG/L                                                                                 0.3
     INITIAL DATE                      81/07/30  81/07/30  81/07/30  81/07/30  81/07/30  81/07/30  81/07/30  81/07/30
     INITIAL TIME-DEPTH-BOTTOM        1430 0000 1430 0001 1430 0003 1430 0009 1430 0016 1430 0022 1430 0028 1530 0005
     FINAL DATE                                                                                               81/07/30
     FINAL TIME-NUMBER OF SAMPLES                                                                             1545 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                                                        CP-S
00010 WATER     TEMP       CENT            25.2      24.9      24.9      23.8      23.3      22.8      22.5
00011 WATER     TEMP       FAHN            77.4      76.8      76.8      74.8      73.9      73.0      72.5
00020 AIR       TEMP       CENT            33.0
00032 CLOUD     COVER      PERCENT           15
00035 WIND      VELOCITY   MPH              7.0
00036 WIND      DIR.FROM   NORTH-0           55
00077 TRANSP    SECCHI     INCHES             6
00094 CNDUCTVY  FIELD      MICROMHO         422       415       422       419       417       419       429
00299 DO        PROBE      MG/L             8.0       8.1       8.2       8.6       8.5       7.9       5.5
00301 DO        SATUR      PERCENT         95.2      96.4      97.6     101.2      97.7      90.8      63.2
00400 PH                   SU              8.70      8.60      8.60      8.70      8.70      8.70      8.40
32216 CHLRPHYL  TOTAL      UG/L                                                                                8.00
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MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)

	INITIAL DATE	80/10/21	80/10/21	80/10/21	80/10/21	80/10/21	80/10/21	80/10/21	80/10/21
	INITIAL TIME-DEPTH-BOTTOM	0940 0000	0940 0006	0940 0016	0940 0032	0940 0065	0940 0098	0940 0131	0940 0163
00010	WATER TEMP CENT	13.2	13.3	13.3	13.2	13.2	13.1	10.3	10.5
00011	WATER TEMP FAHN	55.8	55.9	55.9	55.8	55.8	55.6	50.5	50.9
00020	AIR TEMP CENT	4.0							
00025	BAROMTRC PRESSURE MM OF HG	718							
00032	CLOUD COVER PERCENT	80							
00035	WIND VELOCITY MPH	10.0							
00036	WIND DIR.FROM NORTH-0	135							
00077	TRANSP SECCHI INCHES	156							
00094	CNDUCTVY FIELD MICROMHO	818	818	818	818	818	816	807	772
00299	DO PROBE MG/L	9.2	9.2	9.2	9.2	9.1	9.0	8.3	7.1
00301	DO SATUR PERCENT	86.8	86.8	86.8	86.8	85.8	84.9	73.5	64.0
00400	PH SU	8.30	8.20	8.20	8.20	8.30	8.30	8.10	8.00

	INITIAL DATE	80/10/21	80/10/21	81/04/20	81/04/20	81/04/20	81/04/20	81/04/20	81/04/20
	INITIAL TIME-DEPTH-BOTTOM	0940 0163	1015 0005	0930 0000	0930 0006	0930 0016	0930 0032	0930 0065	0930 0098
	FINAL DATE		80/10/21						
	FINAL TIME-NUMBER OF SAMPLES		1035 6						
	CP-SPACE OR TIME-STATISTICAL FUNC		CP-S						
00010	WATER TEMP CENT	10.4		4.5	4.4	4.4	4.3	4.3	4.3
00011	WATER TEMP FAHN	50.7		40.1	39.9	39.9	39.7	39.7	39.7
00020	AIR TEMP CENT			9.0					
00025	BAROMTRC PRESSURE MM OF HG			723					
00032	CLOUD COVER PERCENT			100					
00035	WIND VELOCITY MPH			18.0					
00036	WIND DIR.FROM NORTH-0			135					
00076	TURB TRBIDMTR HACH FTU		3.0						
00077	TRANSP SECCHI INCHES			96					
00094	CNDUCTVY FIELD MICROMHO	768		806	807	807	807	807	806
00299	DO PROBE MG/L	6.7		12.1	12.1	12.1	12.1	12.1	12.1
00301	DO SATUR PERCENT	59.3		94.5	92.4	92.4	92.4	92.4	92.4
00400	PH SU	7.90		8.50	8.50	8.40	8.40	8.40	8.40
00410	T ALK CACO3 MG/L		172						
00515	RESIDUE DISS-105 C MG/L		542						
00530	RESIDUE TOT NFLT MG/L		2						
00610	NH3+NH4- N TOTAL MG/L		0.020						
00619	UN-IONZD NH3-NH3 MG/L		0.000						
00620	NO3-N TOTAL MG/L		0.040						
00665	PHOS-TOT MG/L P		0.000						
00900	TOT HARD CACO3 MG/L		264						
00916	CALCIUM CA-TOT MG/L		62.0						
00927	MGNSIUM MG,TOT MG/L		27.0						
00940	CHLORIDE TOTAL MG/L		8						
00945	SULFATE SO4-TOT MG/L		238						
32216	CHLRPHYL TOTAL UG/L		2.00						
60050	ALGAE TOTAL /ML		9700						
70507	PHOS-T ORTHO MG/L P		0.000						
71000	ABUNDANT ALGCOUNT 1ST DOM		7870						
71001	ABUNDANT ALGCOUNT 2ND DOM		720						
71002	ABUNDANT ALGCOUNT 3RD DOM		720						
71003	ABUNDANT ALGCOUNT 4TH DOM		350						
71010	ABUNDANT ALGGENUS 1ST DOM		84						
71011	ABUNDANT ALGGENUS 2ND DOM		71						
71012	ABUNDANT ALGGENUS 3RD DOM		69						
71013	ABUNDANT ALGGENUS 4TH DOM		92						
71900	MERCURY HG,TOTAL UG/L		0.2						

	INITIAL DATE	81/04/20	81/04/20	81/04/20	81/04/20	81/05/18	81/05/18	81/05/18	81/05/18
	INITIAL TIME-DEPTH-BOTTOM	0930 0131	0930 0163	0930 0186	0930 0005	0920 0000	0920 0006	0920 0016	0920 0032
	FINAL DATE				81/04/20				
	FINAL TIME-NUMBER OF SAMPLES				1030 6				
	CP-SPACE OR TIME-STATISTICAL FUNC				CP-S				
00010	WATER TEMP CENT	4.3	5.1	4.9		7.5	7.4	7.3	7.2
00011	WATER TEMP FAHN	39.7	41.2	40.8		45.5	45.3	45.1	45.0
00020	AIR TEMP CENT					12.5			
00025	BAROMTRC PRESSURE MM OF HG					727			
00032	CLOUD COVER PERCENT					5			
00035	WIND VELOCITY MPH					5.0			
00036	WIND DIR.FROM NORTH-0					360			
00062	WATER SURF ELE IN FEET					1595.9			
00076	TURB TRBIDMTR HACH FTU				1.0				
00077	TRANSP SECCHI INCHES					204			
00094	CNDUCTVY FIELD MICROMHO	804	772	780		826	826	827	827
00299	DO PROBE MG/L	12.0	11.0	11.3		10.9	10.9	11.0	11.0
00301	DO SATUR PERCENT	91.6	85.9	88.3		91.6	89.3	90.2	90.2
00400	PH SU	8.40	8.40	8.40		8.20	8.20	8.20	8.20
00410	T ALK CACO3 MG/L				172				
00515	RESIDUE DISS-105 C MG/L				560				
00530	RESIDUE TOT NFLT MG/L				0				
00610	NH3+NH4- N TOTAL MG/L				0.000				
00619	UN-IONZD NH3-NH3 MG/L				0.000				
00620	NO3-N TOTAL MG/L				0.010				
00665	PHOS-TOT MG/L P				0.030				
00720	CYANIDE CN-TOT MG/L				0.000				
00900	TOT HARD CACO3 MG/L				270				
00916	CALCIUM CA-TOT MG/L				63.0				
00927	MGNSIUM MG,TOT MG/L				28.0				
00929	SODIUM NA,TOT MG/L				86.00				
00931	SODIUM ADSBTION RATIO				2.3				

BEST DOCUMENT AVAILABLE

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)--Continued

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     INITIAL DATE                       81/04/20  81/04/20  81/04/20  81/04/20  81/05/18  81/05/18  81/05/18  81/05/18
     INITIAL TIME-DEPTH-BOTTOM          0930 0131 0930 0163 0930 0186 0930 0005 0920 0000 0920 0006 0920 0016 0920 0032
     FINAL DATE                                                       81/04/20
     FINAL TIME-NUMBER OF SAMPLES                                     1030 G
     CP-SPACE OR TIME-STATISTICAL FUNC                                CP-S
00940 CHLORIDE   TOTAL       MG/L                                         11
00945 SULFATE    SO4-TOT     MG/L                                        268
01002 ARSENIC    AS,TOT      UG/L                                          1
01012 BERYLIUM   BE,TOT      UG/L                                       0.00
01022 BORON      B,TOT       UG/L                                        200
01027 CADMIUM    CD,TOT      UG/L                                          1
01034 CHROMIUM   CR,TOT      UG/L                                          0
01042 COPPER     CU,TOT      UG/L                                          1
01045   IRON     FE,TOT      UG/L                                         46
01051 LEAD       PB,TOT      UG/L                                          0
01055 MANGNESE      MN       UG/L                                        7.0
01067  NICKEL    NI,TOTAL    UG/L                                         11
01077 SILVER     AG,TOT      UG/L                                        0.0
01092 ZINC       ZN,TOT      UG/L                                          8
01105 ALUMINUM    AL,TOT     UG/L                                         92
01132 LITHIUM    LI,TOT      UG/L                                         44
01147 SELENIUM   SE,TOT      UG/L                                          0
32230 CHLRPHYL      A        MG/L                                      0.003
39516   PCBS     WHL SMPL    UG/L                                      0.000
70507  PHOS-T     ORTHO      MG/L P                                    0.000
71900 MERCURY    HG,TOTAL    UG/L                                        0.0
     INITIAL DATE                       81/05/18  81/05/18  81/05/18  81/05/18  81/05/18  81/05/18  81/05/18  81/06/19
     INITIAL TIME-DEPTH-BOTTOM          0920 0065 0920 0098 0920 0131 0920 0163 0920 0186 0920 0005 0955 0005 0910 0000
     FINAL DATE                                                                           81/05/18  81/05/18
     FINAL TIME-NUMBER OF SAMPLES                                                         0955 G    1010 G
     CP-SPACE OR TIME-STATISTICAL FUNC                                                    CP-S      CP-S
00010   WATER       TEMP     CENT          7.1       6.8       6.6       6.6       7.2                          16.3
00011   WATER       TEMP     FAHN         44.8      44.2      43.9      43.9      45.0                          61.3
00020    AIR        TEMP     CENT                                                                             16.0
00025 BAROMTRC   PRESSURE    MM OF HG                                                                          718
00032   CLOUD     COVER      PERCENT                                                                            98
00035    WIND    VELOCITY    MPH                                                                               2.0
00036    WIND    DIR.FROM    NORTH-0                                                                           135
00076    TURB    TRBIDMTR    HACH FTU                                                  1.0
00077   TRANSP    SECCHI     INCHES                                                                            168
00094 CNDUCTVY   FIELD       MICROMHO      827       825       823       821       792                           807
00299     DO     PROBE       MG/L         11.0      11.0      11.0      10.9      10.2                           8.5
00301     DO     SATUR       PERCENT      90.2      90.2      90.2      89.3      83.6                          85.0
00400     PH                 SU           8.30      8.30      8.30      8.30      8.20                          8.30
00410  T ALK     CACO3       MG/L                                                      180
00515 RESIDUE    DISS-105    C MG/L                                                    586
00530 RESIDUE    TOT NFLT    MG/L                                                        2
00610 NH3+NH4-   N TOTAL     MG/L                                                    0.020
00619 UN-IONZD   NH3-NH3     MG/L                                                    0.000
00620  NO3-N     TOTAL       MG/L                                                    0.000
00665 PHOS-TOT               MG/L P                                                  0.000
00900 TOT HARD   CACO3       MG/L                                                      268
00916 CALCIUM    CA-TOT      MG/L                                                     65.0
00927 MGNSIUM    MG,TOT      MG/L                                                     26.0
00929 SODIUM     NA,TOT      MG/L                                                    84.00
00940 CHLORIDE   TOTAL       MG/L                                                       10
00945 SULFATE    SO4-TOT     MG/L                                                      253
32216 CHLRPHYL   TOTAL       UG/L                                                               8.00
70507  PHOS-T     ORTHO      MG/L P                                                  0.010
71900 MERCURY    HG,TOTAL    UG/L                                                      0.0
     INITIAL DATE                       81/06/19  81/06/19  81/06/19  81/06/19  81/06/19  81/06/19  81/06/19  81/06/19
     INITIAL TIME-DEPTH-BOTTOM          0910 0006 0910 0016 0910 0032 0910 0065 0910 0098 0910 0131 0910 0163 0910 0186
00010   WATER       TEMP     CENT         16.3      16.3      16.2      14.8      10.6       8.2       8.1       8.0
00011   WATER       TEMP     FAHN         61.3      61.3      61.2      58.6      51.1      46.8      46.6      46.4
00094 CNDUCTVY   FIELD       MICROMHO      807       806       806       805       804       807       809       807
00299     DO     PROBE       MG/L          8.5       8.5       8.4       8.6       9.3       9.4       9.3       9.1
00301     DO     SATUR       PERCENT      85.0      85.0      84.0      84.3      83.8      79.0      78.2      76.5
00400     PH                 SU           8.30      8.30      8.30      8.30      8.30      8.30      8.30      8.20
     INITIAL DATE                       81/06/19  81/06/19  81/06/24  81/06/24  81/06/24  81/06/24  81/06/24  81/06/24
     INITIAL TIME-DEPTH-BOTTOM          0910 0005 1000 0005 0930 0000 0930 0006 0930 0016 0930 0032 0930 0065 0930 0098
     FINAL DATE                         81/06/19  81/06/19
     FINAL TIME-NUMBER OF SAMPLES       1000 G    1015 G
     CP-SPACE OR TIME-STATISTICAL FUNC  CP-S      CP-S
00010   WATER       TEMP     CENT                             18.0      18.0      18.0      17.0      16.0      14.0
00011   WATER       TEMP     FAHN                             64.4      64.4      64.4      62.6      60.8      57.2
00020    AIR        TEMP     CENT                             20.0
00032   CLOUD     COVER      PERCENT                            10
00035    WIND    VELOCITY    MPH                               5.0
00036    WIND    DIR.FROM    NORTH-0                           315
00062   WATER    SURF ELE    IN FEET                        1595.4
00076    TURB    TRBIDMTR    HACH FTU      1.0
00410  T ALK     CACO3       MG/L          178
00515 RESIDUE    DISS-105    C MG/L        584
00530 RESIDUE    TOT NFLT    MG/L            5
00610 NH3+NH4-   N TOTAL     MG/L        0.010
00619 UN-IONZD   NH3-NH3     MG/L        0.000
00620  NO3-N     TOTAL       MG/L        0.000
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MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)--Continued

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      INITIAL DATE                          81/06/19  81/06/19  81/06/24  81/06/24  81/06/24  81/06/24  81/06/24  81/06/24
      INITIAL TIME-DEPTH-BOTTOM             0910 0005 1000 0005 0930 0000 0930 0006 0930 0016 0930 0032 0930 0065 0930 0098
      FINAL DATE                            81/06/19  81/06/19
      FINAL TIME-NUMBER OF SAMPLES          1000 6    1015 6
      CP-SPACE OR TIME-STATISTICAL FUNC     CP-S      CP-S
00665 PHOS-TOT               MG/L P        0.010
00900 TOT HARD   CACO3       MG/L            279
00916 CALCIUM    CA-TOT      MG/L           60.0
00927 MGNSIUM   MG,TOT       MG/L           32.0
00940 CHLORIDE    TOTAL      MG/L             10
00945 SULFATE   SO4-TOT      MG/L            246
32216 CHLRPHYL   TOTAL       UG/L                     53.00
70507  PHOS-T    ORTHO      MG/L P         0.000
71900 MERCURY   HG,TOTAL     UG/L            0.3
      INITIAL DATE                          81/06/24  81/06/24  81/06/24  81/07/13  81/07/13  81/07/13  81/07/13  81/07/13
      INITIAL TIME-DEPTH-BOTTOM             0930 0131 0930 0163 1030 0005 0945 0000 0945 0006 0945 0016 0945 0032 0945 0065
      FINAL DATE                                                81/06/24
      FINAL TIME-NUMBER OF SAMPLES                              1045 6
      CP-SPACE OR TIME-STATISTICAL FUNC                         CP-S
00010  WATER      TEMP      CENT            12.0      10.0                14.5      19.5      19.4      19.2      16.6
00011  WATER      TEMP      FAHN            53.6      50.0                67.1      67.1      66.9      66.6      61.9
00020   AIR       TEMP      CENT                                          21.0
00025 BAROMTRC  PRESSURE  MM OF HG                                         723
00032  CLOUD      COVER    PERCENT                                         100
00035   WIND    VELOCITY     MPH                                          10.0
00036   WIND    DIR.FROM  NORTH-0                                           45
00076   TURB    TRBIDMTR  HACH FTU                                18.0
00077  TRANSP    SECCHI    INCHES                                          120
00094 CNDUCTVY  FIELD     MICROMHO                                         790       789       790       793       786
00299    DO      PROBE      MG/L                                           7.9       7.9       7.8       7.8       7.8
00301    DO      SATUR     PERCENT                                        85.9      85.9      85.0      83.0      80.4
00400    PH                  SU                                           8.30      8.30      8.30      8.30      8.20
00410  T ALK     CACO3      MG/L                                   177
00515 RESIDUE   DISS-105  C MG/L                                   584
00530 RESIDUE   TOT NFLT    MG/L                                     2
00610 NH3+NH4-  N TOTAL     MG/L                                 0.100
00619 UN-IONZD   NH3-NH3    MG/L                                 0.010
00620  NO3-N     TOTAL      MG/L                                 0.000
00665 PHOS-TOT             MG/L P                                0.020
00900 TOT HARD   CACO3      MG/L                                   272
00916 CALCIUM    CA-TOT     MG/L                                  61.0
00927 MGNSIUM   MG,TOT      MG/L                                  29.0
00940 CHLORIDE    TOTAL     MG/L                                    11
00945 SULFATE   SO4-TOT     MG/L                                   233
32216 CHLRPHYL   TOTAL      UG/L                                 58.00
70507  PHOS-T    ORTHO     MG/L P                                0.000
      INITIAL DATE                          81/07/13  81/07/13  81/07/13  81/07/13  81/07/13  81/07/30  81/07/30  81/07/30
      INITIAL TIME-DEPTH-BOTTOM             0945 0098 0945 0131 0945 0163 0945 0183 0945 0005 1000 0000 1000 0006 1000 0016
      FINAL DATE                                                                    81/07/13
      FINAL TIME-NUMBER OF SAMPLES                                                  1030 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                             CP-S
00010  WATER      TEMP      CENT            11.0       9.1       8.8      10.4                22.0      22.0      21.0
00011  WATER      TEMP      FAHN            51.8      48.4      47.8      50.7                71.6      71.6      69.8
00020   AIR       TEMP      CENT                                                              25.0
00032  CLOUD     COVER     PERCENT                                                               7
00035   WIND    VELOCITY     MPH                                                              12.0
00036   WIND    DIR.FROM  NORTH-0                                                              135
00062  WATER    SURF ELE   IN FEET                                                          1595.6
00094 CNDUCTVY  FIELD     MICROMHO           792       794       792       768
00299    DO      PROBE      MG/L             7.9       7.9       7.9       7.5
00301    DO      SATUR     PERCENT          71.2      68.1      68.1      66.4
00400    PH                  SU             8.30      8.30      8.20      8.20
32216 CHLRPHYL   TOTAL      UG/L                                                    1.00
      INITIAL DATE                          81/07/30  81/07/30  81/07/30  81/07/30  81/08/13  81/08/13  81/08/13  81/08/13
      INITIAL TIME-DEPTH-BOTTOM             1000 0032 1000 0065 1000 0098 1000 0131 1310 0000 1310 0006 1310 0016 1310 0032
00010  WATER      TEMP      CENT            18.0      16.0      14.0      14.0      23.3      23.1      22.8      22.4
00011  WATER      TEMP      FAHN            64.4      60.8      57.2      57.2      73.9      73.6      73.0      72.3
00020   AIR       TEMP      CENT                                                    27.0
00025 BAROMTRC  PRESSURE  MM OF HG                                                   721
00032  CLOUD     COVER     PERCENT                                                    90
00035   WIND    VELOCITY     MPH                                                     2.0
00036   WIND    DIR.FROM  NORTH-0                                                    180
00077  TRANSP    SECCHI    INCHES                                                    300
00094 CNDUCTVY  FIELD     MICROMHO                                                   800       800       800       800
00299    DO      PROBE      MG/L                                                     7.9       8.0       8.0       7.7
00301    DO      SATUR     PERCENT                                                  90.8      92.0      92.0      87.5
00400    PH                  SU                                                     8.20      8.20      8.20      8.20
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MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE OAHE NEAR DAM, SD (LAT 44 27 00 LONG 100 25 00)--Continued

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     INITIAL DATE                       81/08/13  81/08/13  81/08/13  81/08/13  81/08/13  81/08/13  81/09/03  81/09/03
     INITIAL TIME-DEPTH-BOTTOM          1310 0065 1310 0098 1310 0131 1310 0163 1310 0186 1310 0005 0915 0000 0915 0006
     FINAL DATE                                                                           81/08/13
     FINAL TIME-NUMBER OF SAMPLES                                                         1350 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                                    CP-S
00010  WATER     TEMP      CENT             17.3      11.5       9.8       9.3       9.1                22.0      21.0
00011  WATER     TEMP      FAHN             63.1      52.7      49.6      48.7      48.4                71.6      69.8
00020  AIR       TEMP      CENT                                                                         15.0
00032  CLOUD     COVER     PERCENT                                                                        80
00035  WIND      VELOCITY  MPH                                                                          10.0
00036  WIND      DIR.FROM  NORTH-0                                                                        45
00062  WATER     SURF ELE  IN FEET                                                                    1593.9
00094 CNDUCTVY   FIELD     MICROMHO          808       819       820       818       817
00299  DO        PROBE     MG/L              7.4       8.5       8.7       8.6       8.3
00301  DO        SATUR     PERCENT          76.3      78.7      77.0      74.1      71.6
00400  PH                  SU               8.10      8.10      8.10      8.10      8.00
32216 CHLRPHYL   TOTAL     UG/L                                                           3.00
     INITIAL DATE                       81/09/03  81/09/03  81/09/03  81/09/03  81/09/03  81/09/03  81/09/03
     INITIAL TIME-DEPTH-BOTTOM          0915 0016 0915 0032 0915 0065 0915 0098 0915 0131 0915 0163 0915 0196
00010  WATER     TEMP      CENT             21.0      21.0      19.0      13.0      12.0      11.0      12.0
00011  WATER     TEMP      FAHN             69.8      69.8      66.2      55.4      53.6      51.8      53.6
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MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)

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      INITIAL DATE                      77/10/20   77/10/20   77/10/20   77/10/20   77/10/20   77/10/20   77/10/20   77/10/20
      INITIAL TIME-DEPTH-BOTTOM         1530 0001  1530 0002  1530 0003  1530 0010  1530 0016  1530 0026  1530 0032  1530 0045
00010  WATER    TEMP        CENT        12.0       12.0       12.0       11.5       11.0       11.0       11.0       11.0
00011  WATER    TEMP        FAHR        53.6       53.6       53.6       52.7       51.8       51.8       51.8       51.8
00020   AIR     TEMP        CENT        17.0
00032  CLOUD    COVER       PERCENT     10
00035   WIND    VELOCITY    MPH         5.0
00036   WIND    DIR.FROM    NORTH=0     315
00077  TRANSP   SECCHI      INCHES      132
00094 CNDUCTVY  FIELD       MICROMHO    720        720        720        710        720        720        720        710
00299    DO     PROBE       MG/L        10.4       10.0       10.4       10.6       10.6       10.4       10.4       10.6
00301    DO     SATUR       PERCENT     96.3       92.6       96.3       98.1       95.5       93.7       93.7       95.5
00400    PH                 SU          8.50       8.50       8.50       8.50       8.50       8.50       8.50       8.60
72030 FOREBAY   ELEV,FT     ABOV MSL  1420.0
      INITIAL DATE                      77/10/20   77/10/20   77/10/20   77/10/20   77/10/20   77/10/20   77/10/20   78/03/06
      INITIAL TIME-DEPTH-BOTTOM         1530 0056  1530 0062  1530 0066  1530 0068  1530 0005  1630 0001  1630 0016  1230 0001
      FINAL DATE                                                                    77/10/20
      FINAL TIME-NUMBER OF SAMPLES                                                  1600 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                             CP=S
00010  WATER    TEMP        CENT        11.0       11.0       11.0       11.0                                             0.0
00011  WATER    TEMP        FAHR        51.8       51.8       51.8       51.8                                             32.0
00020   AIR     TEMP        CENT                                                                                          0.0
00032  CLOUD    COVER       PERCENT                                                                                       100
00035   WIND    VELOCITY    MPH                                                                                           5.0
00036   WIND    DIR.FROM    NORTH=0                                                                                       225
00076   TURB    TRBIDMTR    HACH FTU                                                           1.0
00077  TRANSP   SECCHI      INCHES                                                                                        102
00080  COLOR    PT-CO       UNITS                                                   8          8
00094 CNDUCTVY  FIELD       MICROMHO    710        710        710        710                                              640
00299    DO     PROBE       MG/L        10.6       10.4       10.4       10.5                                             15.2
00301    DO     SATUR       PERCENT     95.5       93.7       93.7       94.0                                             104.1
00335   COD     LOWLEVEL    MG/L                                                    7.0        15.0       3.0
00400    PH                 SU          8.60       8.60       8.60       8.60                                             8.30
00410  T ALK    CACO3       MG/L                                                    164        164
00440 HCO3 ION  HCO3        MG/L                                                    200        200
00515 RESIDUE   DISS-105  C MG/L                                                               466
00610 NH3+NH4-  N TOTAL     MG/L                                                    0.010      0.020      0.040
00620  NO3-N    TOTAL       MG/L                                                    0.000      0.020      0.020
00625 TOT KJEL  N           MG/L                                                    0.100      0.300      0.600
00665 PHOS-TOT              MG/L P                                                  0.020      0.000      0.040
00666 PHOS-DIS              MG/L P                                                             0.040      0.020
00671 PHOS-DIS  ORTHO       MG/L P                                                             0.000      0.000
00678 PHOS-TOT  HYD+ORTH    MG/L P                                                  0.00       0.00       0.01
00680 T ORG C   C           MG/L                                                    3.0        3.0        3.0
00945 SULFATE   SO4-TOT     MG/L                                                               192
00951 FLUORIDE  F,TOTAL     MG/L                                                    0.59       0.63
01002 ARSENIC   AS,TOT      UG/L                                                    2
      INITIAL DATE                      77/10/20   77/10/20   77/10/20   77/10/20   77/10/20   77/10/20   77/10/20   78/03/06
      INITIAL TIME-DEPTH-BOTTOM         1530 0056  1530 0062  1530 0066  1530 0068  1530 0005  1630 0001  1630 0016  1230 0001
      FINAL DATE                                                                    77/10/20
      FINAL TIME-NUMBER OF SAMPLES                                                  1600 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                             CP=S
01007 BARIUM    BA,TOT      UG/L                                                    30
01012 BERYLIUM  BE,TOT      UG/L                                                    0.00
01022 BORON     B,TOT       UG/L                                                               170
01027 CADMIUM   CD,TOT      UG/L                                                    2
01034 CHROMIUM  CR,TOT      UG/L                                                    0
01037  COBALT   CO,TOTAL    UG/L                                                    3
01042 COPPER    CU,TOT      UG/L                                                    4
01045   IRON    FE,TOT      UG/L                                                    185
01051 LEAD      PB,TOT      UG/L                                                    20
01055 MANGNESE    MN        UG/L                                                    14.0
01060   MOLY    MO,DISS     UG/L                                                    0
01062 MOLY      MO,TOT      UG/L                                                    0
01067  NICKEL   NI,TOTAL    UG/L                                                    6
01077 SILVER    AG,TOT      UG/L                                                    1.0
01087 VANADIUM  V,TOT       UG/L                                                    0
01092 ZINC      ZN,TOT      UG/L                                                    33
01105 ALUMINUM   AL,TOT     UG/L                                                    130
01132 LITHIUM   LI,TOT      UG/L                                                    46
01145 SELENIUM  SE,DISS     UG/L                                                    1
01147 SELENIUM  SE,TOT      UG/L                                                    1
32216 CHLRPHYL   TOTAL      UG/L                                                    1.10
60050  ALGAE     TOTAL      /ML                                                     15
71000 ABUNDANT  ALGCOUNT    1ST DOM                                                 9
71001 ABUNDANT  ALGCOUNT    2ND DOM                                                 3
71002 ABUNDANT  ALGCOUNT    3RD DOM                                                 1
71003 ABUNDANT  ALGCOUNT    4TH DOM                                                 1
71004 ABUNDANT  ALGCOUNT    5TH DOM                                                 1
71005 ABUNDANT  ALGCOUNT    6TH DOM                                                 1
71010 ABUNDANT  ALGGENUS    1ST DOM                                                 69
71011 ABUNDANT  ALGGENUS    2ND DOM                                                 87
71012 ABUNDANT  ALGGENUS    3RD DOM                                                 66
71013 ABUNDANT  ALGGENUS    4TH DOM                                                 45
71014 ABUNDANT  ALGGENUS    5TH DOM                                                 79
71015 ABUNDANT  ALGGENUS    6TH DOM                                                 59
71900 MERCURY   HG,TOTAL    UG/L                                                    0.3
72030 FOREBAY   ELEV,FT     ABOV MSL                                                                                      1420.0
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MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

	INITIAL DATE			78/03/06	78/03/06	78/03/06	78/03/06	78/03/06	78/03/06	78/03/06	78/03/06
	INITIAL TIME-DEPTH-BOTTOM			1230 0003	1230 0009	1230 0010	1230 0016	1230 0026	1230 0040	1230 0052	1230 0066
00010	WATER	TEMP	CENT	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
00011	WATER	TEMP	FAHN	32.0	32.0	32.0	32.0	32.0	32.0	32.9	32.9
00040	WIND	DIRECT	AZIMUTH							5	
00094	CNDUCTVY	FIELD	MICROMHO	640	640	640	640	640	660	680	700
00299	DO	PROBE	MG/L	14.4	15.2	15.2	15.2	15.6	14.8	14.4	13.2
00301	DO	SATUR	PERCENT	96.6	104.1	104.1	104.1	106.6	101.4	101.4	95.0
00400	PH		SU	8.30	8.30	8.30	8.20	8.20	8.20	8.20	8.20

	INITIAL DATE			78/03/06	78/03/06	78/03/06	78/03/06	78/04/20	78/04/20	78/04/20	78/04/20
	INITIAL TIME-DEPTH-BOTTOM			1230 0072	1330 0001	1330 0040	1230 0005	0830 0001	0830 0003	0830 0015	0830 0033
	FINAL DATE						78/03/06				
	FINAL TIME-NUMBER OF SAMPLES						1430 6				
	CP-SPACE OR TIME-STATISTICAL FUNC						CP-8				
00010	WATER	TEMP	CENT	1.0				6.0	6.0	6.0	6.0
00011	WATER	TEMP	FAHN	33.8				42.8	42.8	42.8	42.8
00020	AIR	TEMP	CENT					0.0			
00032	CLOUD	COVER	PERCENT					100			
00035	WIND	VELOCITY	MPH					15.0			
00036	WIND	DIR.FROM	NORTH-0					315			
00040	WIND	DIRECT	AZIMUTH						0		
00076	TURB	TRBIDMTR	HACH FTU				0.0				
00077	TRANSP	SECCHI	INCHES					29			
00080	COLOR	PT-CO	UNITS				10				
00094	CNDUCTVY	FIELD	MICROMHO	700				645	648	645	645
00299	DO	PROBE	MG/L	14.0				12.2	12.2	12.2	12.2
00301	DO	SATUR	PERCENT	98.6				97.6	97.6	97.6	97.6
00335	COD	LOWLEVEL	MG/L		4.0	6.0					
00400	PH		SU	8.20				8.00	8.00	8.00	8.00
00410	T ALK	CACO3	MG/L				170				
00440	HCO3 ION	HCO3	MG/L				207				
00515	RESIDUE	DISS-105	C MG/L				534				
00530	RESIDUE	TOT NFLT	MG/L				0				
00610	NH3+NH4-	N TOTAL	MG/L		0.020	0.040					
00620	NO3-N	TOTAL	MG/L		0.090		0.090				
00625	TOT KJEL	N	MG/L		0.300		0.200				
00665	PHOS-TOT		MG/L P		0.010	0.000					
00666	PHOS-DIS		MG/L P		0.000	0.010					
00671	PHOS-DIS	ORTHO	MG/L P		0.000	0.000					
00678	PHOS-TOT	HYD+ORTH	MG/L P		0.00		0.00				
00680	T ORG C	C	MG/L		3.0	3.0					
00940	CHLORIDE	TOTAL	MG/L				11				
00945	SULFATE	SO4-TOT	MG/L				187				
00951	FLUORIDE	F,TOTAL	MG/L				0.70				
01002	ARSENIC	AS,TOT	UG/L				2				
01007	BARIUM	BA,TOT	UG/L				30				
01012	BERYLIUM	BE,TOT	UG/L				0.00				
01022	BORON	B,TOT	UG/L				190				
01027	CADMIUM	CD,TOT	UG/L				0				
01034	CHROMIUM	CR,TOT	UG/L				0				
01037	COBALT	CO,TOTAL	UG/L				4				
01042	COPPER	CU,TOT	UG/L				4				
01045	IRON	FE,TOT	UG/L				120				
01051	LEAD	PB,TOT	UG/L				20				
01055	MANGNESE	MN	UG/L				8.0				
01060	MOLY	MO,DISS	UG/L				0				
01062	MOLY	MO,TOT	UG/L				0				
01067	NICKEL	NI,TOTAL	UG/L				7				
01077	SILVER	AG,TOT	UG/L				2.0				
01087	VANADIUM	V,TOT	UG/L				0				
01092	ZINC	ZN,TOT	UG/L				25				
01105	ALUMINUM	AL,TOT	UG/L				50				
01132	LITHIUM	LI,TOT	UG/L				50				
01147	SELENIUM	SE,TOT	UG/L				1				
32216	CHLRPHYL	TOTAL	UG/L				5.96				
60050	ALGAE	TOTAL	/ML				47				
71000	ABUNDANT	ALGCOUNT	1ST DOM				47				
71010	ABUNDANT	ALGGENUS	1ST DOM				77				
71900	MERCURY	HG,TOTAL	UG/L				0.0				
72030	FOREBAY	ELEV,FT	ABOV MSL					1420.0			

	INITIAL DATE			78/04/20	78/04/20	78/04/20	78/04/20	78/04/20	78/04/20	78/04/20	78/04/20
	INITIAL TIME-DEPTH-BOTTOM			0830 0049	0830 0065	0830 0082	0830 0092	0930 0001	0930 0033	0830	0830 0005
	FINAL DATE									78/04/20	78/04/20
	FINAL TIME-NUMBER OF SAMPLES									0930 6	1030 6
	CP-SPACE OR TIME-STATISTICAL FUNC									CP-8	CP-8
00010	WATER	TEMP	CENT	5.5	5.5	5.0	4.0				
00011	WATER	TEMP	FAHN	41.9	41.9	41.0	39.2				
00076	TURB	TRBIDMTR	HACH FTU							10.0	
00080	COLOR	PT-CO	UNITS							20	
00094	CNDUCTVY	FIELD	MICROMHO	640	640	635	640				
00299	DO	PROBE	MG/L	12.2	12.2	12.2	12.0				
00301	DO	SATUR	PERCENT	97.6	97.6	95.3	91.6				
00335	COD	LOWLEVEL	MG/L					20.0	13.0		
00400	PH		SU	8.00	7.90	7.90	7.80				
00410	T ALK	CACO3	MG/L							136	
00440	HCO3 ION	HCO3	MG/L							166	
00515	RESIDUE	DISS-105	C MG/L							422	
00530	RESIDUE	TOT NFLT	MG/L							40	

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

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     INITIAL DATE                           78/04/20  78/04/20  78/04/20  78/04/20  78/04/20  78/04/20  78/04/20  78/04/20
     INITIAL TIME-DEPTH-BOTTOM              0830 0049 0830 0065 0830 0062 0830 0092 0930 0001 0930 0033 0830      0830 0005
     FINAL DATE                                                                                         78/04/20  78/04/20
     FINAL TIME-NUMBER OF SAMPLES                                                                       0930 6    1030 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                                                  CP-S      CP-S
00610 NH3+NH4-   N TOTAL     MG/L                                                   0.060     0.070
00620  NO3-N     TOTAL       MG/L                                                   0.270     0.270
00625 TOT KJEL   N           MG/L                                                   0.700     0.500
00665 PHOS-TOT               MG/L P                                                 0.080     0.070
00666 PHOS-DIS               MG/L P                                                 0.040     0.030
00671 PHOS-DIS   ORTHO       MG/L P                                                 0.010     0.000
00678 PHOS-TOT   HYD+ORTH    MG/L P                                                  0.07      0.07
00680 T ORG C    C           MG/L                                                     5.0       5.0
00900 TOT HARD   CACO3       MG/L                                                                         196
00940 CHLORIDE   TOTAL       MG/L                                                                          10
00945 SULFATE    SO4-TOT     MG/L                                                                         128
00951 FLUORIDE   F,TOTAL     MG/L                                                                        0.30
01002 ARSENIC    AS,TOT      UG/L                                                                                   2
01007 BARIUM     BA,TOT      UG/L                                                                                  30
01012 BERYLIUM   BE,TOT      UG/L                                                                                0.00
01022 BORON      B,TOT       UG/L                                                                         147
01027 CADMIUM    CD,TOT      UG/L                                                                                   9
01034 CHROMIUM   CR,TOT      UG/L                                                                                   0
01037  COBALT    CO,TOTAL    UG/L                                                                                   3
01042 COPPER     CU,TOT      UG/L                                                                                   4
01045   IRON     FE,TOT      UG/L                                                                                 800
01051 LEAD       PB,TOT      UG/L                                                                                  20
01055 MANGNESE     MN        UG/L                                                                               124.0
01060   MOLY     MO,DISS     UG/L                                                                                   0
01062 MOLY       MO,TOT      UG/L                                                                           0
01067  NICKEL    NI,TOTAL    UG/L                                                                                   6
01077 SILVER     AG,TOT      UG/L                                                                                 0.0
01087 VANADIUM   V,TOT       UG/L                                                                                   0
01092 ZINC       ZN,TOT      UG/L                                                                                  45
01105 ALUMINUM    AL,TOT     UG/L                                                                                1770
01132 LITHIUM    LI,TOT      UG/L                                                                                  41
01147 SELENIUM   SE,TOT      UG/L                                                                                   2
60050  ALGAE      TOTAL      /ML                                                                                  174
71000 ABUNDANT   ALGCOUNT     1ST DOM                                                                              51
71001 ABUNDANT   ALGCOUNT     2ND DOM                                                                              49
71002 ABUNDANT   ALGCOUNT     3RD DOM                                                                              25
71003 ABUNDANT   ALGCOUNT     4TH DOM                                                                              20
71004 ABUNDANT   ALGCOUNT     5TH DOM                                                                              16
71005 ABUNDANT   ALGCOUNT     6TH DOM                                                                               7
71006 ABUNDANT   ALGCOUNT     7TH DOM                                                                               4
71007 ABUNDANT   ALGCOUNT     8TH DOM                                                                               2
71010 ABUNDANT   ALGGENUS     1ST DOM                                                                              77
71011 ABUNDANT   ALGGENUS     2ND DOM                                                                              69
71012 ABUNDANT   ALGGENUS     3RD DOM                                                                              84
71013 ABUNDANT   ALGGENUS     4TH DOM                                                                              68
71014 ABUNDANT   ALGGENUS     5TH DOM                                                                              12
71015 ABUNDANT   ALGGENUS     6TH DOM                                                                              87
71016 ABUNDANT   ALGGENUS     7TH DOM                                                                              81
71017 ABUNDANT   ALGGENUS     8TH DOM                                                                              57
71900 MERCURY    HG,TOTAL     UG/L                                                                                0.2
     INITIAL DATE                           78/04/26  78/04/29  78/05/17  78/05/17  78/05/17  78/05/17  78/05/17  78/05/17
     INITIAL TIME-DEPTH-BOTTOM              1100 0005 0830 0065 1230 0001 1230 0003 1230 0016 1230 0053 1230 0048 1230 0049
     FINAL DATE                             78/04/26
     FINAL TIME-NUMBER OF SAMPLES           1200 6
     CP-SPACE OR TIME-STATISTICAL FUNC      CP-S
00010  WATER       TEMP        CENT                      5.5       7.0       7.0       7.0       7.0       7.0       7.0
00011  WATER       TEMP        FAHN                     41.9      44.6      44.6      44.6      44.6      44.6      44.6
00020   AIR        TEMP        CENT                               15.0
00032  CLOUD      COVER      PERCENT                                90
00035   WIND     VELOCITY      MPH                                25.0
00036   WIND     DIR.FROM    NORTH=0                               135
00077  TRANSP     SECCHI      INCHES                                36
00094 CNDUCTVY   FIELD       MICROMHO                    640       655       655       655       655       655       655
00299    DO       PROBE        MG/L                     12.2      11.2      11.2      11.2      11.3      11.4      11.4
00301    DO       SATUR      PERCENT                    97.6      91.8      91.8      91.6      92.6      93.4      93.4
00400    PH                     SU                      8.40      8.20      8.20      8.20      8.30      8.30      8.30
32210 CHLRPHYL   TOTAL        UG/L              26.84
72030 FOREBAY    ELEV,FT     ABOV MSL                           1420.0
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MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

INITIAL DATE	78/05/17	78/05/17	78/05/17	78/05/17	78/05/17	78/05/17	78/07/22	78/07/22
INITIAL TIME-DEPTH-BOTTOM	1230 0006	1230 0081	1230 0040	1330 0001	1330 0033	1230 0005	0950 0001	0950 0006
FINAL DATE						78/05/17		
FINAL TIME-NUMBER OF SAMPLES						1400 6		
CP-SPACE OR TIME-STATISTICAL FUNC						CP=S		
00010 WATER TEMP CENT	6.5	6.5	6.0				22.3	22.5
00011 WATER TEMP FAHN	43.7	43.7	42.8				72.1	72.5
00020 AIR TEMP CENT							20.0	
00032 CLOUD COVER PERCENT							90	
00035 WIND VELOCITY MPH							12.0	
00036 WIND DIR.FROM NORTH-0							315	
00076 TURB TRBIDMTR HACH FTU						1.0		
00077 TRANSP SECCHI INCHES							156	
00080 COLOR PT-CO UNITS						7		
00094 CNDUCTVY FIELD MICROMHO	660	680	710				625	625
00299 DO PROBE MG/L	11.6	11.6	11.6				8.3	8.2
00301 DO SATUR PERCENT	95.1	95.1	94.4				94.3	94.3
00335 COD LOWLEVEL MG/L				13.0	13.0			
00400 PH SU	8.40	8.40	8.40				8.50	8.50
00410 T ALK CACO3 MG/L						132		
00440 HCO3 ION HCO3 MG/L						161		
00515 RESIDUE DISS-105 C MG/L						426		
00530 RESIDUE TOT NFLT MG/L						11		
00610 NH3+NH4- N TOTAL MG/L				0.040	0.040			
00620 NO3-N TOTAL MG/L				0.160	0.180			
00625 TOT KJEL N MG/L				0.400	0.400			
00665 PHOS-TOT MG/L P				0.030	0.050			
00666 PHOS-DIS MG/L P				0.020	0.020			
00671 PHOS-DIS ORTHO MG/L P				0.000	0.000			
00678 PHOS-TOT HYD+ORTH MG/L P				0.01	0.02			
00680 T ORG C C MG/L				5.0	5.0			
00900 TOT HARD CACO3 MG/L						201		
00940 CHLORIDE TOTAL MG/L						10		
00945 SULFATE SO4-TOT MG/L						180		
00951 FLUORIDE F,TOTAL MG/L						0.40		
01002 ARSENIC AS,TOT UG/L						1		
01007 BARIUM BA,TOT UG/L						20		
01012 BERYLIUM BE,TOT UG/L						0.00		
01022 BORON B,TOT UG/L						120		
01027 CADMIUM CD,TOT UG/L						2		
01034 CHROMIUM CR,TOT UG/L						0		
01037 COBALT CO,TOTAL UG/L						10		
01042 COPPER CU,TOT UG/L						8		
01045 IRON FE,TOT UG/L						100		
01051 LEAD PB,TOT UG/L						20		
01055 MANGNESE MN UG/L						17.0		
01062 MOLY MO,TOT UG/L						0		
01067 NICKEL NI,TOTAL UG/L						10		
01077 SILVER AG,TOT UG/L						0.0		
01087 VANADIUM V,TOT UG/L						0		
01092 ZINC ZN,TOT UG/L						9		
01105 ALUMINUM AL,TOT UG/L						70		
01132 LITHIUM LI,TOT UG/L						39		
01147 SELENIUM SE,TOT UG/L						2		
32216 CHLRPHYL TOTAL UG/L						12.36		
60050 ALGAE TOTAL /ML						2187		
71000 ABUNDANT ALGCOUNT 1ST DOM						2086		
71001 ABUNDANT ALGCOUNT 2ND DOM						82		
71002 ABUNDANT ALGCOUNT 3RD DOM						7		
71003 ABUNDANT ALGCOUNT 4TH DOM						6		
71004 ABUNDANT ALGCOUNT 5TH DOM						4		
71005 ABUNDANT ALGCOUNT 6TH DOM						1		
71006 ABUNDANT ALGCOUNT 7TH DOM						1		
71010 ABUNDANT ALGGENUS 1ST DOM						68		
71011 ABUNDANT ALGGENUS 2ND DOM						77		
71012 ABUNDANT ALGGENUS 3RD DOM						87		
71013 ABUNDANT ALGGENUS 4TH DOM						97		
71014 ABUNDANT ALGGENUS 5TH DOM						92		
71015 ABUNDANT ALGGENUS 6TH DOM						86		
71016 ABUNDANT ALGGENUS 7TH DOM						79		
71900 MERCURY HG,TOTAL UG/L						0.2		
72030 FOREBAY ELEV,FT ABOV MSL							1420.0	

INITIAL DATE	78/07/22	78/07/22	78/07/22	78/07/22	78/08/11	78/08/16	78/08/16	78/08/16
INITIAL TIME-DEPTH-BOTTOM	0950 0016	0950 0032	0950 0066	1000 0005	1200	1200 0001	1200 0003	1200 0016
FINAL DATE				78/07/22	78/08/11			
FINAL TIME-NUMBER OF SAMPLES				1100 6	1245 6			
CP-SPACE OR TIME-STATISTICAL FUNC				CP=S	CP=S			
00010 WATER TEMP CENT	22.4	22.4	20.4			22.5	23.0	23.0
00011 WATER TEMP FAHN	72.3	72.3	68.7			72.5	73.4	73.4
00020 AIR TEMP CENT						23.0		
00032 CLOUD COVER PERCENT						0		
00035 WIND VELOCITY MPH						5.0		
00036 WIND DIR.FROM NORTH-0						180		
00076 TURB TRBIDMTR HACH FTU					16.0			
00077 TRANSP SECCHI INCHES						96		
00080 COLOR PT-CO UNITS					5			
00094 CNDUCTVY FIELD MICROMHO	625	625	615			735	730	730
00299 DO PROBE MG/L	[illegible]	[illegible]	7.2			8.1	8.2	8.3

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

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     INITIAL DATE                     78/07/22     78/07/22     78/07/22     78/07/22     78/08/11     78/08/16     78/08/16     78/08/16
     INITIAL TIME-DEPTH-BOTTOM        0950 0016    0950 0032    0950 0066    1000 0005    1200         1200 0001    1200 0003    1200 0016
     FINAL DATE                                                              78/07/22     78/08/11
     FINAL TIME-NUMBER OF SAMPLES                                            1100 6       1245 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                       CP=S         CP=S
00301    DO     SATUR     PERCENT     95.2         93.2         78.3                                   93.1         94.1         95.4
00400    PH                 SU        8.50         8.50         8.40                                   8.30         8.30         8.30
00410  T ALK    CACO3     MG/L                                                               156
00440 HCO3 ION   HCO3     MG/L                                                               190
00515 RESIDUE   DISS-105 C MG/L                                                              536
00530 RESIDUE   TOT NFLT  MG/L                                                                 7
00900 TOT HARD  CACO3     MG/L                                                               260
00940 CHLORIDE   TOTAL    MG/L                                                                11
00945 SULFATE   SO4-TOT   MG/L                                                               209
00951 FLUORIDE   F,TOTAL  MG/L                                                              0.40
01022 BORON     B,TOT     UG/L                                                               160
32216 CHLRPHYL   TOTAL    UG/L                                                 0.75
60050  ALGAE    TOTAL     /ML                                                    54
71000 ABUNDANT  ALGCOUNT  1ST DOM                                                38
71001 ABUNDANT  ALGCOUNT  2ND DOM                                                12
71002 ABUNDANT  ALGCOUNT  3RD DOM                                                 1
71003 ABUNDANT  ALGCOUNT  4TH DOM                                                 1
71004 ABUNDANT  ALGCOUNT  5TH DOM                                                 1
71010 ABUNDANT  ALGGENUS  1ST DOM                                                77
71011 ABUNDANT  ALGGENUS  2ND DOM                                                68
71012 ABUNDANT  ALGGENUS  3RD DOM                                                69
71013 ABUNDANT  ALGGENUS  4TH DOM                                                87
71014 ABUNDANT  ALGGENUS  5TH DOM                                                28
72030 FOREBAY   ELEV,FT   ABOV MSL                                                               1421.0
     INITIAL DATE                     78/08/16     78/08/16     78/08/16     78/08/16     78/08/16     78/08/16     78/08/16     78/08/16
     INITIAL TIME-DEPTH-BOTTOM        1200 0033    1200 0048    1200 0049    1200 0066    1200 0075    1200 0005    1300 0001    1300 0033
     FINAL DATE                                                                                        78/08/16
     FINAL TIME-NUMBER OF SAMPLES                                                                      1245 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                                                 CP=S
00010  WATER    TEMP      CENT        22.5         22.5         22.5         21.0         21.0
00011  WATER    TEMP      FAHR        72.5         72.5         72.5         69.8         69.8
00094 CNDUCTVY  FIELD     MICROMHO     735          735          735          740          740
00299   DO      PROBE     MG/L         8.4          8.4          8.4          7.6          7.3
00301   DO      SATUR     PERCENT     96.6         96.0         96.0         84.4         81.1
00335   COD     LOWLEVEL  MG/L                                                                                      7.0          5.0
00400   PH                  SU        8.30         8.40         8.40         8.40         8.40
00610 NH3+NH4-   N TOTAL  MG/L                                                                                    0.030        0.020
00620  NO3-N     TOTAL    MG/L                                                                                    0.090        0.110
00625 TOT KJEL     N      MG/L                                                                                    0.200        0.100
00665 PHOS-TOT            MG/L P                                                                                  0.010        0.010
00666 PHOS-DIS            MG/L P                                                                                  0.000        0.000
00671 PHOS-DIS   ORTHO    MG/L P                                                                                  0.000        0.000
00678 PHOS-TOT  HYD+ORTH  MG/L P                                                                                   0.01         0.01
00680 T ORG C      C      MG/L                                                                                      4.0          4.0
01002 ARSENIC   AS,TOT    UG/L                                                                              2
01007 BARIUM    BA,TOT    UG/L                                                                             40
01012 BERYLIUM  BE,TOT    UG/L                                                                           0.00
01027 CADMIUM   CD,TOT    UG/L                                                                              3
01034 CHROMIUM  CR,TOT    UG/L                                                                              0
01037  COBALT   CO,TOTAL  UG/L                                                                              2
01042 COPPER    CU,TOT    UG/L                                                                              5
01045   IRON    FE,TOT    UG/L                                                                            430
01051 LEAD      PB,TOT    UG/L                                                                             10
01055 MANGNESE    MN      UG/L                                                                           39.0
01062 MOLY      MO,TOT    UG/L                                                                              0
01067  NICKEL   NI,TOTAL  UG/L                                                                             11
01077 SILVER    AG,TOT    UG/L                                                                            0.0
01087 VANADIUM  V,TOT     UG/L                                                                              0
01092 ZINC      ZN,TOT    UG/L                                                                             39
01105 ALUMINUM   AL,TOT   UG/L                                                                            440
01132 LITHIUM   LI,TOT    UG/L                                                                             44
01147 SELENIUM  SE,TOT    UG/L                                                                              2
32216 CHLRPHYL   TOTAL    UG/L                                                                           2.25
60050  ALGAE     TOTAL    /ML                                                                              26
71000 ABUNDANT  ALGCOUNT  1ST DOM                                                                           8
71001 ABUNDANT  ALGCOUNT  2ND DOM                                                                           7
71002 ABUNDANT  ALGCOUNT  3RD DOM                                                                           6
71003 ABUNDANT  ALGCOUNT  4TH DOM                                                                           2
71004 ABUNDANT  ALGCOUNT  5TH DOM                                                                           2
71005 ABUNDANT  ALGCOUNT  6TH DOM                                                                           1
71010 ABUNDANT  ALGGENUS  1ST DOM                                                                          12
71011 ABUNDANT  ALGGENUS  2ND DOM                                                                          68
71012 ABUNDANT  ALGGENUS  3RD DOM                                                                          77
71013 ABUNDANT  ALGGENUS  4TH DOM                                                                          57
71014 ABUNDANT  ALGGENUS  5TH DOM                                                                          87
71015 ABUNDANT  ALGGENUS  6TH DOM                                                                          79
71900 MERCURY   HG,TOTAL  UG/L                                                                            0.5
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BEST DOCUMENT AVAILABLE

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

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     INITIAL DATE                      78/08/17  78/08/17  78/08/17  78/08/17  78/08/21  78/10/11  78/10/11  78/10/11
     INITIAL TIME-DEPTH-BOTTOM         1000 0001 1000 0026 1000 0039 1000 0066 1030 0005 1400 0001 1400 0005 1400 0010
     FINAL DATE                                                                78/08/21
     FINAL TIME-NUMBER OF SAMPLES                                              1100 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                         CP-S
00010 WATER      TEMP      CENT         22.0      22.0      22.0      22.0                 16.0      15.0      15.0
00011 WATER      TEMP      FAHN         71.6      71.6      71.6      71.6                 60.8      59.0      59.0
00020 AIR        TEMP      CENT         20.0                                             20.0
00032 CLOUD      COVER     PERCENT         0                                               40
00035 WIND       VELOCITY  MPH           5.0                                             30.0
00036 WIND       DIR.FROM  NORTH=0       315                                              315
00077 TRANSP     SECCHI    INCHES        180                                               90
00094 CNDUCTVY   FIELD     MICROMHO      710       660       700       700
00299 DO         PROBE     MG/L          7.0       7.0       6.8       6.6                  9.4       9.6       9.6
00301 DO         SATUR     PERCENT      79.5      79.5      77.3      75.0                 94.0      94.1      94.1
00400 PH                   SU           8.10      8.10      8.10      8.20
00610 NH3+NH4-   N TOTAL   MG/L                                        0.090
00620 NO3-N      TOTAL     MG/L                                        0.110
00625 TOT KJEL   N         MG/L                                        0.600
00665 PHOS-TOT             MG/L P                                      0.020
00678 PHOS-TOT   HYD+ORTH  MG/L P                                       0.02
00680 T ORG C    C         MG/L                                          6.0
32216 CHLRPHYL   TOTAL     UG/L                                         1.12
60050 ALGAE      TOTAL     /ML                                           646
71000 ABUNDANT   ALGCOUNT  1ST DOM                                       346
71001 ABUNDANT   ALGCOUNT  2ND DOM                                        86
71002 ABUNDANT   ALGCOUNT  3RD DOM                                        86
71003 ABUNDANT   ALGCOUNT  4TH DOM                                        45
71004 ABUNDANT   ALGCOUNT  5TH DOM                                        22
71005 ABUNDANT   ALGCOUNT  6TH DOM                                        22
71006 ABUNDANT   ALGCOUNT  7TH DOM                                        22
71010 ABUNDANT   ALGGENUS  1ST DOM                                         1
71011 ABUNDANT   ALGGENUS  2ND DOM                                        77
71012 ABUNDANT   ALGGENUS  3RD DOM                                        68
71013 ABUNDANT   ALGGENUS  4TH DOM                                        92
71014 ABUNDANT   ALGGENUS  5TH DOM                                        57
71015 ABUNDANT   ALGGENUS  6TH DOM                                        81
71016 ABUNDANT   ALGGENUS  7TH DOM                                        87
72030 FOREBAY    ELEV,FT   ABOV MSL   1420.0                                           1421.0
     INITIAL DATE                      78/10/11  78/10/11  78/10/11  78/10/11  78/10/11  78/10/11  78/10/11  78/10/11
     INITIAL TIME-DEPTH-BOTTOM         1400 0015 1400 0020 1400 0025 1400 0030 1400 0035 1400 0040 1400 0050 1530 0000
     FINAL DATE                                                                                              78/10/11
     FINAL TIME-NUMBER OF SAMPLES                                                                            1530 6
     CP-SPACE OR TIME-STATISTICAL FUNC                                                                       CP-S
00010 WATER      TEMP      CENT         15.0      15.0      14.5      14.5      14.5      14.0      14.0
00011 WATER      TEMP      FAHN         59.0      59.0      58.1      58.1      58.1      57.2      57.2
00299 DO         PROBE     MG/L          9.6       9.8       9.9       9.9      10.0      10.1      10.2
00301 DO         SATUR     PERCENT      94.1      96.1      97.1      97.1      96.0      97.1      98.1
00335 COD        LOWLEVEL  MG/L                                                                            9.0
00610 NH3+NH4-   N TOTAL   MG/L                                                                          0.040
00620 NO3-N      TOTAL     MG/L                                                                          0.150
00671 PHOS-DIS   ORTHO     MG/L P                                                                        0.000
00678 PHOS-TOT   HYD+ORTH  MG/L P                                                                         0.02
00680 T ORG C    C         MG/L                                                                            4.0
     INITIAL DATE                      78/10/11  78/10/11  78/10/11  78/10/11  79/02/02  79/02/21  79/02/21  79/02/21
     INITIAL TIME-DEPTH-BOTTOM         1530 0005 1530 0055 1530 0005 1530 0055 1100 0005 1230 0000 1230 0009 1230 0016
     FINAL DATE                        78/10/11  78/10/11  78/10/11  78/10/11  79/02/02
     FINAL TIME-NUMBER OF SAMPLES      1530 6    1530 6    1610 6    1610 6    1200 6
     CP-SPACE OR TIME-STATISTICAL FUNC CP-S      CP-S      CP-S      CP-S      CP-S
00010 WATER      TEMP      CENT                                                                   0.0       0.0       0.0
00011 WATER      TEMP      FAHN                                                                  32.0      32.0      32.0
00020 AIR        TEMP      CENT                                                                   4.0-
00032 CLOUD      COVER     PERCENT                                                                100
00035 WIND       VELOCITY  MPH                                                                    0.0
00036 WIND       DIR.FROM  NORTH=0                                                                  0
00077 TRANSP     SECCHI    INCHES                                                                 132
00080 COLOR      PT-CO     UNITS          15
00299 DO         PROBE     MG/L                                                                  11.5      11.6      11.6
00301 DO         SATUR     PERCENT                                                               78.8      79.5      79.5
00400 PH                   SU                                                                    7.40      7.40      7.40
00410 T ALK      CACO3     MG/L          156
00440 HCO3 ION   HCO3      MG/L          190
00515 RESIDUE    DISS-105  C MG/L        486
00530 RESIDUE    TOT NFLT  MG/L            9
00610 NH3+NH4-   N TOTAL   MG/L                                  0.040
00620 NO3-N      TOTAL     MG/L                                  0.150
00671 PHOS-DIS   ORTHO     MG/L P                  0.000
00678 PHOS-TOT   HYD+ORTH  MG/L P                                 0.01
00680 T ORG C    C         MG/L                                    4.0
00900 TOT HARD   CACO3     MG/L          232
00940 CHLORIDE   TOTAL     MG/L            9
00945 SULFATE    SO4-TOT   MG/L          194
00951 FLUORIDE   F,TOTAL   MG/L         0.40
01002 ARSENIC    AS,TOT    UG/L            2
01007 BARIUM     BA,TOT    UG/L           40
01012 BERYLIUM   BE,TOT    UG/L         0.00
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BEST DOCUMENT AVAILABLE

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

	INITIAL DATE			78/10/11	78/10/11	78/10/11	78/10/11	79/02/02	79/02/21	79/02/21	79/02/21
	INITIAL TIME-DEPTH-BOTTOM			1530 0005	1530 0055	1530 0005	1530 0055	1100 0005	1230 0000	1230 0009	1230 001
	FINAL DATE			78/10/11	78/10/11	78/10/11	78/10/11	79/02/02			
	FINAL TIME-NUMBER OF SAMPLES			1530 6	1530 6	1610 6	1610 6	1200 6			
	CP-SPACE OR TIME-STATISTICAL FUNC			CP=S	CP=S	CP=S	CP=S	CP=S			
01022	BORON	B,TOT	UG/L	260							
01027	CADMIUM	CD,TOT	UG/L	1							
01034	CHROMIUM	CR,TOT	UG/L	0							
01037	COBALT	CO,TOTAL	UG/L	0							
01042	COPPER	CU,TOT	UG/L	5							
01045	IRON	FE,TOT	UG/L	390							
01051	LEAD	PB,TOT	UG/L	10							
01055	MANGNESE	MN	UG/L	122.0							
01060	MOLY	MO,DISS	UG/L	0							
01067	NICKEL	NI,TOTAL	UG/L	6							
01077	SILVER	AG,TOT	UG/L	0.0							
01092	ZINC	ZN,TOT	UG/L	26							
01105	ALUMINUM	AL,TOT	UG/L	250							
01132	LITHIUM	LI,TOT	UG/L	46							
01147	SELENIUM	SE,TOT	UG/L	1							
32216	CHLRPHYL	TOTAL	UG/L			11.24					
60050	ALGAE	TOTAL	/ML			104		376			
71000	ABUNDANT	ALGCOUNT	1ST DOM			55		316			
71001	ABUNDANT	ALGCOUNT	2ND DOM			21		54			
71002	ABUNDANT	ALGCOUNT	3RD DOM			13		4			
71003	ABUNDANT	ALGCOUNT	4TH DOM			5					
71004	ABUNDANT	ALGCOUNT	5TH DOM			4					
71005	ABUNDANT	ALGCOUNT	6TH DOM			3					
71006	ABUNDANT	ALGCOUNT	7TH DOM			1					
71007	ABUNDANT	ALGCOUNT	8TH DOM			1					
71010	ABUNDANT	ALGGENUS	1ST DOM			84		66			
71011	ABUNDANT	ALGGENUS	2ND DOM			77		77			
71012	ABUNDANT	ALGGENUS	3RD DOM			69		45			
71013	ABUNDANT	ALGGENUS	4TH DOM			66					
71014	ABUNDANT	ALGGENUS	5TH DOM			92					
71015	ABUNDANT	ALGGENUS	6TH DOM			45					
71016	ABUNDANT	ALGGENUS	7TH DOM			87					
71017	ABUNDANT	ALGGENUS	8TH DOM			86					
71900	MERCURY	HG,TOTAL	UG/L	0.0							

	INITIAL DATE			79/02/21	79/02/21	79/02/21	79/02/21	79/02/21	79/02/21	79/02/21	79/02/21
	INITIAL TIME-DEPTH-BOTTOM			1230 0026	1230 0032	1230 0049	1230 0065	1230 0070	1130 0000	1130 0005	1130 0055
	FINAL DATE								79/02/21	79/02/21	79/02/21
	FINAL TIME-NUMBER OF SAMPLES								1230 6	1230 6	1230 6
	CP-SPACE OR TIME-STATISTICAL FUNC								CP=S	CP=S	CP=S
00010	WATER	TEMP	CENT	0.0	0.0	0.0	0.0	0.0			
00011	WATER	TEMP	FAHN	32.0	32.0	32.0	32.0	32.0			
00076	TURB	TRBIDMTR	HACH FTU							0.6	
00080	COLOR	PT-CO	UNITS							5	
00299	DO	PROBE	MG/L	11.6	11.6	11.6	11.6	11.4			
00301	DO	SATUR	PERCENT	79.5	79.5	79.5	79.5	78.1			
00335	COD	LOWLEVEL	MG/L						10.0		7.0
00400	PH		SU	7.50	7.60	7.70	7.70	7.80			
00410	T ALK	CACO3	MG/L							172	
00440	HCO3 ION	HCO3	MG/L							210	
00515	RESIDUE	DISS-105 C	MG/L							526	
00530	RESIDUE	TOT NFLT	MG/L							4	
00610	NH3+NH4-	N TOTAL	MG/L						0.040		0.000
00620	NO3-N	TOTAL	MG/L						0.160		0.190
00625	TOT KJEL	N	MG/L						0.400		0.200
00665	PHOS-TOT		MG/L P						0.010		0.010
00666	PHOS-DIS		MG/L P						0.020		0.010
00671	PHOS-DIS	ORTHO	MG/L P						0.000		0.000
00678	PHOS-TOT	HYD+ORTH	MG/L P						0.01		0.01
00680	T ORG C	C	MG/L						4.0		4.0
00900	TOT HARD	CACO3	MG/L							247	
00940	CHLORIDE	TOTAL	MG/L							12	
00945	SULFATE	SO4-TOT	MG/L							209	
00951	FLUORIDE	F,TOTAL	MG/L							0.51	
01002	ARSENIC	AS,TOT	UG/L							2	
01007	BARIUM	BA,TOT	UG/L							40	
01012	BERYLIUM	BE,TOT	UG/L							0.00	
01022	BORON	B,TOT	UG/L							127	
01027	CADMIUM	CD,TOT	UG/L							4	
01034	CHROMIUM	CR,TOT	UG/L							0	
01037	COBALT	CO,TOTAL	UG/L							4	
01042	COPPER	CU,TOT	UG/L							6	
01045	IRON	FE,TOT	UG/L							110	
01051	LEAD	PB,TOT	UG/L							30	
01055	MANGNESE	MN	UG/L							9.0	
01060	MOLY	MO,DISS	UG/L							0	
01067	NICKEL	NI,TOTAL	UG/L							10	
01087	VANADIUM	V,TOT	UG/L							0	
01092	ZINC	ZN,TOT	UG/L							23	
01105	ALUMINUM	AL,TOT	UG/L							30	
01132	LITHIUM	LI,TOT	UG/L							44	
01147	SELENIUM	SE,TOT	UG/L							1	
32216	CHLRPHYL	TOTAL	UG/L							20.22	
71900	MERCURY	HG,TOTAL	UG/L							0.4	

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

	INITIAL DATE			79/05/02	79/05/02	79/05/02	79/05/02	79/05/02	79/05/02	79/05/02	79/05/02
	INITIAL TIME-DEPTH-BOTTOM			1100 0000	1100 0055	1300 0000	1300 0003	1300 0009	1300 0019	1300 0032	1300 0049
	FINAL DATE			79/05/02	79/05/02						
	FINAL TIME-NUMBER OF SAMPLES			1100 6	1100 6						
	CP-SPACE OR TIME-STATISTICAL FUNC			CP=S	CP=S						
00010	WATER	TEMP	CENT			7.0	7.0	7.0	7.0	7.0	7.0
00011	WATER	TEMP	FAHN			44.6	44.6	44.6	44.6	44.6	44.6
00020	AIR	TEMP	CENT			10.0					
00035	WIND	VELOCITY	MPH			20.0					
00036	WIND	DIR.FROM	NORTH=0			315					
00077	TRANSP	SECCHI	INCHES			84					
00094	CNDUCTVY	FIELD	MICROMHO			750	735	735	735	735	720
00299	DO	PROBE	MG/L			15.2	14.3	14.2	14.2	14.0	14.0
00301	DO	SATUR	PERCENT			124.6	117.2	116.4	116.4	114.8	114.8
00335	COD	LOWLEVEL	MG/L	8.0	10.0						
00400	PH		SU			8.00	8.00	8.00	8.00	8.10	8.10
00610	NH3+NH4-	N TOTAL	MG/L	0.020	0.020						
00615	NO2-N	TOTAL	MG/L	0.000							
00620	NO3-N	TOTAL	MG/L	0.050	0.050						
00625	TOT KJEL	N	MG/L	0.500	0.400						
00665	PHOS-TOT		MG/L P	0.010	0.050						
00666	PHOS-DIS		MG/L P	0.020	0.040						
00671	PHOS-DIS	ORTHO	MG/L P	0.000	0.040						
00678	PHOS-TOT	HYD+ORTH	MG/L P		0.05						
00680	T ORG C	C	MG/L	4.0	5.0						

	INITIAL DATE			79/05/02	79/05/02	79/05/02	79/05/31	79/05/31	79/05/31	79/05/31	79/05/31
	INITIAL TIME-DEPTH-BOTTOM			1300 0065	1300 0072	1200 0005	1100 0000	1100 0055	1200 0005	1650 0000	1650 0003
	FINAL DATE					79/05/02	79/05/31	79/05/31	79/05/31		
	FINAL TIME-NUMBER OF SAMPLES					1300 6	1100 6	1100 6	1300 6		
	CP-SPACE OR TIME-STATISTICAL FUNC					CP=S	CP=S	CP=8	CP=8		
00010	WATER	TEMP	CENT	7.0	7.0					15.0	15.0
00011	WATER	TEMP	FAHN	44.6	44.6					59.0	59.0
00020	AIR	TEMP	CENT							23.0	
00032	CLOUD	COVER	PERCENT							15	
00035	WIND	VELOCITY	MPH							10.0	
00036	WIND	DIR.FROM	NORTH=0							270	
00076	TURB	TRBIDMTR	HACH FTU			2.0			1.0		
00077	TRANSP	SECCHI	INCHES							72	
00080	COLOR	PT-CO	UNITS			10			10		
00094	CNDUCTVY	FIELD	MICROMHO	720	720					775	775
00299	DO	PROBE	MG/L	14.0	14.0					13.0	12.8
00301	DO	SATUR	PERCENT	114.8	114.8					127.5	125.5
00335	COD	LOWLEVEL	MG/L			8.0	14.0	13.0			
00400	PH		SU	8.10	8.10					8.40	8.40
00410	T ALK	CACO3	MG/L			162			166		
00515	RESIDUE	DISS-105	C MG/L			512			552		
00530	RESIDUE	TOT NFLT	MG/L			3			10		
00610	NH3+NH4-	N TOTAL	MG/L				0.010	0.020			
00620	NO3-N	TOTAL	MG/L				0.060	0.070			
00625	TOT KJEL	N	MG/L				0.400	0.300			
00665	PHOS-TOT		MG/L P				0.020	0.020			
00666	PHOS-DIS		MG/L P				0.000	0.000			
00671	PHOS-DIS	ORTHO	MG/L P				0.000	0.000			
00678	PHOS-TOT	HYD+ORTH	MG/L P				0.02	0.02			
00680	T ORG C	C	MG/L				4.0	4.0			
00900	TOT HARD	CACO3	MG/L			243			256		
00916	CALCIUM	CA-TOT	MG/L			55.5			61.0		
00927	MGNSIUM	MG,TOT	MG/L			25.4			13.0		
00929	SODIUM	NA,TOT	MG/L			72.00					
00937	PTSSIUM	K,TOT	MG/L			4.00					
00940	CHLORIDE	TOTAL	MG/L			10			11		
00945	SULFATE	SO4-TOT	MG/L			198			219		
00951	FLUORIDE	F,TOTAL	MG/L			0.60			0.50		
01002	ARSENIC	AS,TOT	UG/L			1			2		
01007	BARIUM	BA,TOT	UG/L			40					
01012	BERYLIUM	BE,TOT	UG/L			0.00					
01022	BORON	B,TOT	UG/L			143			166		
01027	CADMIUM	CD,TOT	UG/L			1					
01034	CHROMIUM	CR,TOT	UG/L			0					
01037	COBALT	CO,TOTAL	UG/L			3					
01042	COPPER	CU,TOT	UG/L			4					
01045	IRON	FE,TOT	UG/L			120					
01051	LEAD	PB,TOT	UG/L			30					
01055	MANGNESE	MN	UG/L			19.0					
01062	MOLY	MO,TOT	UG/L			0					
01067	NICKEL	NI,TOTAL	UG/L			0					
01087	VANADIUM	V,TOT	UG/L			0					
01092	ZINC	ZN,TOT	UG/L			24					
01105	ALUMINUM	AL,TOT	UG/L			130					
01132	LITHIUM	LI,TOT	UG/L			43					
60050	ALGAE	TOTAL	/ML			832					
71000	ABUNDANT	ALGCOUNT	1ST DOM			825					
71001	ABUNDANT	ALGCOUNT	2ND DOM			3					
71002	ABUNDANT	ALGCOUNT	3RD DOM			2					
71003	ABUNDANT	ALGCOUNT	4TH DOM			1					
71004	ABUNDANT	ALGCOUNT	5TH DOM			1					
71010	ABUNDANT	ALGGENUS	1ST DOM			77					
71011	ABUNDANT	ALGGENUS	2ND DOM			44					
71012	ABUNDANT	ALGGENUS	3RD DOM			66					
71013	ABUNDANT	ALGGENUS	4TH DOM			87					
71014	ABUNDANT	ALGGENUS	5TH DOM			81					
71900	MERCURY	HG,TOTAL	UG/L			0.4			0.5		

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

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      INITIAL DATE                        79/05/31  79/05/31  79/05/31  79/05/31  79/05/31  79/05/31  79/05/31  79/07/10
      INITIAL TIME-DEPTH-BOTTOM           1650 0009 1650 0019 1650 0032 1650 0049 1650 0065 1650 0072 1605 0005 0930 0000
      FINAL DATE                                                                                      79/05/31
      FINAL TIME-NUMBER OF SAMPLES                                                                    1650 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                                               CP=S
00010  WATER      TEMP      CENT          15.0      13.5      13.0      13.0      12.0      12.0                20.0
00011  WATER      TEMP      FAHN          59.0      56.3      55.4      55.4      53.6      53.6                68.0
00020   AIR       TEMP      CENT                                                                                22.0
00032  CLOUD     COVER     PERCENT                                                                                 0
00035   WIND     VELOCITY    MPH                                                                                 9.0
00036   WIND     DIR.FROM  NORTH-0                                                                                90
00094 CNDUCTVY   FIELD     MICROMHO        775       780       790       790       785       785
00299    DO      PROBE       MG/L         13.2      12.6      10.8      12.2      11.6      11.4
00301    DO      SATUR     PERCENT       129.4     125.1     101.9     115.1     109.5     105.6
00400    PH                   SU          8.30      8.40      8.40      8.40      8.40      8.40
01007 BARIUM     BA,TOT      UG/L                                                                       10
01012 BERYLIUM   BE,TOT      UG/L                                                                     1.00
01027 CADMIUM    CD,TOT      UG/L                                                                        5
01034 CHROMIUM   CR,TOT      UG/L                                                                        0
01037  COBALT    CO,TOTAL    UG/L                                                                        0
01042 COPPER     CU,TOT      UG/L                                                                        6
01045   IRON     FE,TOT      UG/L                                                                      350
01051 LEAD       PB,TOT      UG/L                                                                       40
01055 MANGNESE     MN        UG/L                                                                     39.0
01062 MOLY       MO,TOT      UG/L                                                                        0
01067  NICKEL    NI,TOTAL    UG/L                                                                        0
01077 SILVER     AG,TOT      UG/L                                                                      0.0
01087 VANADIUM   V,TOT       UG/L                                                                       20
01092 ZINC       ZN,TOT      UG/L                                                                       26
01105 ALUMINUM    AL,TOT     UG/L                                                                      350
01132 LITHIUM    LI,TOT      UG/L                                                                       47
01147 SELENIUM   SE,TOT      UG/L                                                                        3
60050  ALGAE      TOTAL      /ML                                                                         7
71000 ABUNDANT   ALGCOUNT   1ST DOM                                                                      7
71010 ABUNDANT   ALGGENUS   1ST DOM                                                                     77
      INITIAL DATE                        79/07/10  79/07/10  79/07/10  79/07/10  79/07/10  79/07/10  79/07/10  79/07/10
      INITIAL TIME-DEPTH-BOTTOM           0930 0006 0930 0016 0930 0032 0930 0065 0930 0068 0830 0005 1100      1100
      FINAL DATE                                                                            79/07/10
      FINAL TIME-NUMBER OF SAMPLES                                                          0930 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                                     CP=S
00010  WATER      TEMP      CENT          20.0      20.0      20.0      18.0      15.0
00011  WATER      TEMP      FAHN          68.0      68.0      68.0      64.4      59.0
00076   TURB     TRBIDMTR  HACH FTU                                                                                8.0
00080  COLOR      PT-CO     UNITS                                                                                   10
00335   COD      LOWLEVEL    MG/L                                                                     12.0
00410  T ALK      CACO3      MG/L                                                                                  160
00515 RESIDUE    DISS-105  C MG/L                                                                                  472
00530 RESIDUE    TOT NFLT    MG/L                                                                                   12
00610 NH3+NH4-   N TOTAL     MG/L                                                                    0.130
00620  NO3-N      TOTAL      MG/L                                                                    0.080
00625 TOT KJEL     N         MG/L                                                                    0.500
00665 PHOS-TOT              MG/L P                                                                   0.020
00670 PHOS-TOT   HYD+ORTH   MG/L P                                                                    0.02
00680 T ORG C      C         MG/L                                                                      5.0
00900 TOT HARD    CACO3      MG/L                                                                                  240
00916 CALCIUM     CA-TOT     MG/L                                                                                 58.0
00927 MGNSIUM    MG,TOT      MG/L                                                                                 25.0
00929 SODIUM     NA,TOT      MG/L                                                                                76.00
00937 PTSSIUM    K,TOT       MG/L                                                                                 5.00
00940 CHLORIDE     TOTAL     MG/L                                                                                    9
00945 SULFATE    SO4-TOT     MG/L                                                                                  224
00951 FLUORIDE    F,TOTAL    MG/L                                                                                 0.50
01002 ARSENIC    AS,TOT      UG/L                                                                                    2
01007 BARIUM     BA,TOT      UG/L                                                                                   60
01012 BERYLIUM   BE,TOT      UG/L                                                                                 1.00
01022 BORON      B,TOT       UG/L                                                                                  202
01027 CADMIUM    CD,TOT      UG/L                                                                                    1
01034 CHROMIUM   CR,TOT      UG/L                                                                                   10
01037  COBALT    CO,TOTAL    UG/L                                                                                    1
01042 COPPER     CU,TOT      UG/L                                                                                    5
01045   IRON     FE,TOT      UG/L                                                                                  300
01051 LEAD       PB,TOT      UG/L                                                                                   14
01055 MANGNESE     MN        UG/L                                                                                 52.0
01062 MOLY       MO,TOT      UG/L                                                                                   20
01067  NICKEL    NI,TOTAL    UG/L                                                                                   11
01077 SILVER     AG,TOT      UG/L                                                                                  1.0
01087 VANADIUM   V,TOT       UG/L                                                                                   20
01092 ZINC       ZN,TOT      UG/L                                                                                   26
01105 ALUMINUM    AL,TOT     UG/L                                                                                  330
01132 LITHIUM    LI,TOT      UG/L                                                                                   50
01147 SELENIUM   SE,TOT      UG/L                                                                                    1
60050  ALGAE      TOTAL      /ML                                                            1126
71000 ABUNDANT   ALGCOUNT   1ST DOM                                                         1058
71001 ABUNDANT   ALGCOUNT   2ND DOM                                                           57
71002 ABUNDANT   ALGCOUNT   3RD DOM                                                            7
71003 ABUNDANT   ALGCOUNT   4TH DOM                                                            4
71010 ABUNDANT   ALGGENUS   1ST DOM                                                           84
71011 ABUNDANT   ALGGENUS   2ND DOM                                                           77
71012 ABUNDANT   ALGGENUS   3RD DOM                                                           68
71013 ABUNDANT   ALGGENUS   4TH DOM                                                           92
71900 MERCURY    HG,TOTAL    UG/L                                                                                  0.3
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MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

INITIAL DATE	79/07/16	79/07/16	79/07/16	79/07/16	79/07/16	79/07/16	79/07/16	79/07/16
INITIAL TIME-DEPTH-BOTTOM	1200 0000	1200 0005	1200 0055	1335 0000	1335 0003	1335 0009	1335 0019	1335 0032
FINAL DATE	79/07/16	79/07/16	79/07/16					
FINAL TIME-NUMBER OF SAMPLES	1300 6	1300 6	1300 6					
CP-SPACE OR TIME-STATISTICAL FUNC	CP=S	CP=S	CP=S					
00010 WATER TEMP CENT				23.5	23.0	22.5	21.0	20.0
00011 WATER TEMP FAHN				74.3	73.4	72.5	69.8	68.0
00020 AIR TEMP CENT				27.0				
00032 CLOUD COVER PERCENT				0				
00035 WIND VELOCITY MPH				10.0				
00036 WIND DIR.FROM NORTH=0				135				
00077 TRANSP SECCHI INCHES				120				
00094 CNDUCTVY FIELD MICROMHO				765	770	770	785	790
00299 DO PROBE MG/L				11.2	13.2	13.0	11.6	10.4
00301 DO SATUR PERCENT				131.8	151.7	149.4	128.9	113.0
00335 COD LOWLEVEL MG/L	10.0		9.0					
00400 PH SU				7.80	7.80	7.90	8.00	8.00
00610 NH3+NH4- N TOTAL MG/L	0.030		0.040					
00620 NO3-N TOTAL MG/L	0.030		0.090					
00625 TOT KJEL N MG/L	0.400		0.500					
00665 PHOS-TOT MG/L P	0.010		0.010					
00666 PHOS-DIS MG/L P	0.000		0.000					
00671 PHOS-DIS ORTHO MG/L P	0.000		0.000					
00678 PHOS-TOT HYD+ORTH MG/L P	0.01		0.01					
00680 T ORG C C MG/L	6.0		5.0					
32216 CHLRPHYL TOTAL UG/L		7.00						
60050 ALGAE TOTAL /ML		886						
71000 ABUNDANT ALGCOUNT 1ST DOM		865						
71001 ABUNDANT ALGCOUNT 2ND DOM		11						
71002 ABUNDANT ALGCOUNT 3RD DOM		7						
71003 ABUNDANT ALGCOUNT 4TH DOM		5						
71004 ABUNDANT ALGCOUNT 5TH DOM		1						
71010 ABUNDANT ALGGENUS 1ST DOM		84						
71011 ABUNDANT ALGGENUS 2ND DOM		77						
71012 ABUNDANT ALGGENUS 3RD DOM		87						
71013 ABUNDANT ALGGENUS 4TH DOM		68						
71014 ABUNDANT ALGGENUS 5TH DOM		39						

INITIAL DATE	79/07/16	79/07/16	79/07/16	79/08/16	79/08/16	79/08/16	79/08/16	79/08/16
INITIAL TIME-DEPTH-BOTTOM	1335 0049	1335 0065	1335 0072	1100 0005	1200 0000	1200 0005	1200 0055	1415 0000
FINAL DATE				79/08/16	79/08/16	79/08/16	79/08/16	
FINAL TIME-NUMBER OF SAMPLES				1200 6	1300 6	1300 6	1300 6	
CP-SPACE OR TIME-STATISTICAL FUNC				CP=S	CP=S.	CP=S	CP=S	
00010 WATER TEMP CENT	19.0	18.5	18.5					22.0
00011 WATER TEMP FAHN	66.2	65.3	65.3					71.6
00020 AIR TEMP CENT								22.0
00032 CLOUD COVER PERCENT								96
00035 WIND VELOCITY MPH								20.0
00036 WIND DIR.FROM NORTH=0								225
00076 TURB TRBIDMTR HACH FTU				3.0				
00077 TRANSP SECCHI INCHES								96
00080 COLOR PT-CO UNITS				5				
00094 CNDUCTVY FIELD MICROMHO	785	795	795					765
00299 DO PROBE MG/L	10.0	10.0	9.0					8.6
00301 DO SATUR PERCENT	106.4	106.4	95.7					97.7
00335 COD LOWLEVEL MG/L					10.0		10.0	
00400 PH SU	8.00	8.00	7.90					8.20
00410 T ALK CACO3 MG/L				162				
00515 RESIDUE DISS-105 C MG/L				538				
00530 RESIDUE TOT NFLT MG/L				5				
00610 NH3+NH4- N TOTAL MG/L					0.040		0.030	
00620 NO3-N TOTAL MG/L					0.050		0.080	
00625 TOT KJEL N MG/L					0.030		0.300	
00665 PHOS-TOT MG/L P					0.020		0.030	
00666 PHOS-DIS MG/L P					0.000		0.010	
00671 PHOS-DIS ORTHO MG/L P					0.000		0.000	
00678 PHOS-TOT HYD+ORTH MG/L P					0.02		0.01	
00680 T ORG C C MG/L					4.0		4.0	
00900 TOT HARD CACO3 MG/L				241				
00916 CALCIUM CA-TOT MG/L				56.0				
00927 MGNSIUM MG,TOT MG/L				24.0				
00929 SODIUM NA,TOT MG/L				119.00				
00937 PTSSIUM K,TOT MG/L				5.00				
00940 CHLORIDE TOTAL MG/L				10				
00945 SULFATE SO4-TOT MG/L				221				
00951 FLUORIDE F,TOTAL MG/L				0.20				
01007 BARIUM BA,TOT UG/L				70				
01012 BERYLIUM BE,TOT UG/L				0.00				
01022 BORON B,TOT UG/L				190				
01027 CADMIUM CD,TOT UG/L				1				
01034 CHROMIUM CR,TOT UG/L				0				
01037 COBALT CO,TOTAL UG/L				0				
01042 COPPER CU,TOT UG/L				2				
01045 IRON FE,TOT UG/L				159				
01051 LEAD PB,TOT UG/L				0				

BEST DOCUMENT AVAILABLE

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

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      INITIAL DATE                                   79/07/18   79/07/18   79/07/18   79/08/16   79/08/16   79/08/16   79/08/16   79/08/16
      INITIAL TIME-DEPTH-BOTTOM                      1335 0049  1335 0065  1335 0072  1100 0005  1200 0000  1200 0005  1200 0055  1415 0000
      FINAL DATE                                                                      79/08/16   79/08/16   79/08/16   79/08/16
      FINAL TIME-NUMBER OF SAMPLES                                                    1200 6     1300 6     1300 6     1300 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                               CP=5       CP=5       CP=5       CP=5
01055 MANGNESE      MN          UG/L                                                  34.0
01062 MOLY        MO,TOT        UG/L                                                     0
01067  NICKEL     NI,TOTAL      UG/L                                                    13
01077 SILVER      AG,TOT        UG/L                                                   0.0
01087 VANADIUM    V,TOT         UG/L                                                     0
01092 ZINC        ZN,TOT        UG/L                                                    12
01105 ALUMINUM     AL,TOT       UG/L                                                   197
01132 LITHIUM     LI,TOT        UG/L                                                    37
01147 SELENIUM    SE,TOT        UG/L                                                     2
32216 CHLRPHYL     TOTAL        UG/L                                                                          7.00
60050  ALGAE       TOTAL        /ML                                                                             15
71000 ABUNDANT    ALGCOUNT     1ST DOM                                                                          13
71001 ABUNDANT    ALGCOUNT     2ND DOM                                                                           1
71002 ABUNDANT    ALGCOUNT     3RD DOM                                                                           1
71010 ABUNDANT    ALGGENUS     1ST DOM                                                                          84
71011 ABUNDANT    ALGGENUS     2ND DOM                                                                          68
71012 ABUNDANT    ALGGENUS     3RD DOM                                                                          65
71900 MERCURY     HG,TOTAL      UG/L                                                   0.4
      INITIAL DATE                                   79/08/16   79/08/16   79/08/16   79/08/16   79/08/16   79/08/16   79/08/16   79/09/25
      INITIAL TIME-DEPTH-BOTTOM                      1415 0003  1415 0009  1415 0019  1415 0032  1415 0049  1415 0065  1415 0072  1400 0005
      FINAL DATE                                                                                                                  79/09/25
      FINAL TIME-NUMBER OF SAMPLES                                                                                                1420 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                                                                           CP=5
00010  WATER       TEMP         CENT                 22.0       22.0       22.0       22.0       21.5       21.5       21.0
00011  WATER       TEMP         FAHN                 71.6       71.6       71.6       71.6       70.7       70.7       69.8
00094 CNDUCTVY   FIELD        MICROMHO                765        775        775        765        775        775        780
00299    DO        PROBE        MG/L                  8.6        8.6        8.6        8.6        8.4        6.5        5.6
00301    DO        SATUR      PERCENT                97.7       97.7       97.7       97.7       95.5       73.9       62.2
00400    PH                       SU                 8.20       8.20       8.20       8.20       8.10       8.10       8.10
71900 MERCURY     HG,TOTAL      UG/L                                                                                              0.0
      INITIAL DATE                                   79/10/10   79/10/10   79/10/10   80/04/24   80/04/24   80/04/24   80/04/24   80/04/24
      INITIAL TIME-DEPTH-BOTTOM                      1100 0000  1100 0005  1100 0055  1320 0000  1320 0006  1320 0016  1320 0032  1320 0065
      FINAL DATE                                     79/10/10   79/10/10   79/10/10
      FINAL TIME-NUMBER OF SAMPLES                   1200 6     1200 6     1200 6
      CP-SPACE OR TIME-STATISTICAL FUNC              CP=5       CP=5       CP=5
00010  WATER       TEMP         CENT                                                   8.5        8.5        8.0        8.0        7.0
00011  WATER       TEMP         FAHN                                                  47.3       47.3       46.4       46.4       44.6
00020   AIR        TEMP         CENT                                                  10.0
00025 BAROMTRC    PRESSURE    MM OF HG                                                 725
00032  CLOUD       COVER      PERCENT                                                    0
00035   WIND      VELOCITY      MPH                                                   10.0
00036   WIND      DIR,FROM    NORTH=0                                                   90
00076   TURB      TRBIDMTR    HACH FTU                         1.0
00077  TRANSP      SECCHI      INCHES                                                  108
00080  COLOR       PT-CO       UNITS                             5
00094 CNDUCTVY    FIELD       MICROMHO                                                 745        745        740        740        745
00299    DO        PROBE        MG/L                                                  12.3       12.2       12.2       12.1       11.8
00301    DO        SATUR      PERCENT                                                106.0      105.2      102.5      101.7       96.7
00335   COD       LOWLEVEL      MG/L                  8.0                   8.0
00410  T ALK       CACO3        MG/L                           174
00515 RESIDUE     DISS-105    C MG/L                           532
00530 RESIDUE     TOT NFLT      MG/L                             8
00610 NH3+NH4-    N TOTAL       MG/L                0.040                 0.020
00620  NO3-N       TOTAL        MG/L                0.050                 0.050
00625 TOT KJEL       N          MG/L                0.500                 0.400
00665 PHOS-TOT                 MG/L P               0.020                 0.030
00666 PHOS-DIS                 MG/L P               0.020                 0.020
00671 PHOS-DIS     ORTHO       MG/L P               0.000                 0.000
00678 PHOS-TOT    HYD+ORTH     MG/L P                0.02                  0.03
00680 T ORG C        C          MG/L                  4.0                   4.0
00900 TOT HARD     CACO3        MG/L                           242
00916 CALCIUM      CA-TOT       MG/L                          60.0
00927 MGNSIUM     MG,TOT        MG/L                          22.0
00929 SODIUM      NA,TOT        MG/L                         74.00
00937 PTSSIUM     K,TOT         MG/L                          5.00
00940 CHLORIDE     TOTAL        MG/L                             3
00945 SULFATE     SO4-TOT       MG/L                           210
00951 FLUORIDE     F,TOTAL      MG/L                          0.50
01002 ARSENIC     AS,TOT        UG/L                             2
01007 BARIUM      BA,TOT        UG/L                            84
01012 BERYLIUM    BE,TOT        UG/L                          0.00
01022 BORON       B,TOT         UG/L                           126
01027 CADMIUM     CD,TOT        UG/L                             3
01034 CHROMIUM    CR,TOT        UG/L                            10
01037  COBALT     CO,TOTAL      UG/L                             7
01042 COPPER      CU,TOT        UG/L                             6
01045   IRON      FE,TOT        UG/L                           173
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BEST DOCUMENT AVAILABLE

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

INITIAL DATE	79/10/10	79/10/10	79/10/10	80/04/24	80/04/24	80/04/24	80/04/24	80/04/24
INITIAL TIME-DEPTH-BOTTOM	1100 0000	1100 0005	1100 0055	1320 0000	1320 0006	1320 0016	1320 0032	1320 0065
FINAL DATE	79/10/10	79/10/10	79/10/10					
FINAL TIME-NUMBER OF SAMPLES	1200 6	1200 6	1200 6					
CP-SPACE OR TIME-STATISTICAL FUNC	CP-S	CP-S	CP-S					
01051 LEAD PB,TOT UG/L		11						
01055 MANGNESE MN UG/L		34.0						
01062 MOLY MO,TOT UG/L		0						
01067 NICKEL NI,TOTAL UG/L		9						
01077 SILVER AG,TOT UG/L		0.0						
01087 VANADIUM V,TOT UG/L		0						
01092 ZINC ZN,TOT UG/L		38						
01105 ALUMINUM AL,TOT UG/L		280						
01132 LITHIUM LI,TOT UG/L		41						
01147 SELENIUM SE,TOT UG/L		1						
32216 CHLRPHYL TOTAL UG/L		2.00						
71900 MERCURY HG,TOTAL UG/L		0.5						
INITIAL DATE	80/04/24	80/04/24	80/04/24	80/05/20	80/05/20	80/05/20	80/05/20	80/05/20
INITIAL TIME-DEPTH-BOTTOM	1320 0075	1320 0065	1345 0005	1615 0000	1615 0006	1615 0016	1615 0032	1615 0065
FINAL DATE		80/04/24	80/04/24					
FINAL TIME-NUMBER OF SAMPLES		1345 6	1400 6					
CP-SPACE OR TIME-STATISTICAL FUNC		CP-S	CP-S					
00010 WATER TEMP CENT	7.0			14.5	14.0	13.0	12.5	11.0
00011 WATER TEMP FAHN	44.6			58.1	57.2	55.4	54.5	51.8
00020 AIR TEMP CENT				27.0				
00025 BAROMTRC PRESSURE MM OF HG				74				
00032 CLOUD COVER PERCENT				5				
00035 WIND VELOCITY MPH				10.0				
00036 WIND DIR,FROM NORTH=0				23				
00076 TURB TRBIDMTR HACH FTU			2.0					
00077 TRANSP SECCHI INCHES				72				
00094 CNDUCTVY FIELD MICROMHO	745			760	795	803	800	808
00299 DO PROBE MG/L	11.8			13.0	13.4	13.6	13.8	12.9
00301 DO SATUR PERCENT	96.7			127.5	128.6	130.2	130.2	116.2
00400 PH SU				8.60	8.60	8.60	8.60	8.50
00410 T ALK CACO3 MG/L			162					
00515 RESIDUE DISS-105 C MG/L			518					
00530 RESIDUE TOT NFLT MG/L			1					
00610 NH3+NH4- N TOTAL MG/L			0.010					
00620 NO3-N TOTAL MG/L			0.070					
00665 PHOS-TOT MG/L P			0.010					
00900 TOT HARD CACO3 MG/L			245					
00916 CALCIUM CA-TOT MG/L			62.0					
00927 MGNSIUM MG,TOT MG/L			22.0					
00940 CHLORIDE TOTAL MG/L			11					
00945 SULFATE SO4-TOT MG/L			230					
32216 CHLRPHYL TOTAL UG/L		10.00						
70507 PHOS-T ORTHO MG/L P			0.000					
71900 MERCURY HG,TOTAL UG/L			0.2					
INITIAL DATE	80/05/20	80/05/20	80/05/20	80/06/17	80/06/17	80/06/17	80/06/17	80/06/17
INITIAL TIME-DEPTH-BOTTOM	1615 0072	1615 0065	1615 0005	1430 0000	1430 0001	1430 0003	1430 0009	1430 0016
FINAL DATE		80/05/20	80/05/20					
FINAL TIME-NUMBER OF SAMPLES		1630 6	1640 6					
CP-SPACE OR TIME-STATISTICAL FUNC		CP-S	CP-S					
00010 WATER TEMP CENT	11.0			22.0	22.0	22.0	21.5	21.0
00011 WATER TEMP FAHN	51.8			71.6	71.6	71.6	70.7	69.8
00020 AIR TEMP CENT				27.0				
00032 CLOUD COVER PERCENT				5				
00035 WIND VELOCITY MPH				3.0				
00036 WIND DIR,FROM NORTH=0				225				
00062 WATER SURF ELE IN FEET				1355.5				
00076 TURB TRBIDMTR HACH FTU		2.0						
00094 CNDUCTVY FIELD MICROMHO	808							
00299 DO PROBE MG/L	12.9							
00301 DO SATUR PERCENT	116.2							
00400 PH SU	8.50							
00410 T ALK CACO3 MG/L		166						
00515 RESIDUE DISS-105 C MG/L		560						
00530 RESIDUE TOT NFLT MG/L		4						
00610 NH3+NH4- N TOTAL MG/L		0.070						
00619 UN-IONZD NH3-NH3 MG/L		0.010						
00620 NO3-N TOTAL MG/L		0.010						
00665 PHOS-TOT MG/L P		0.020						
00900 TOT HARD CACO3 MG/L		256						
00916 CALCIUM CA-TOT MG/L		61.0						
00927 MGNSIUM MG,TOT MG/L		23.0						
00940 CHLORIDE TOTAL MG/L		12						
00945 SULFATE SO4-TOT MG/L		238						
32216 CHLRPHYL TOTAL UG/L			9.00					
70507 PHOS-T ORTHO MG/L P		0.000						
71900 MERCURY HG,TOTAL UG/L		0.2						

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

INITIAL DATE	80/06/17	80/06/17	80/06/17	80/06/17	80/06/17	80/06/19	80/07/08	80/07/08
INITIAL TIME-DEPTH-BOTTOM	1430 0022	1430 0029	1430 0036	1430 0042	2130 0045	1100 0005	1415 0000	1415 0006
FINAL DATE						80/06/19		
FINAL TIME-NUMBER OF SAMPLES						1200 6		
CP-SPACE OR TIME-STATISTICAL FUNC						CP=S		
00010 WATER TEMP CENT	21.0	20.5	20.5	19.0	19.0		22.4	22.4
00011 WATER TEMP FAHN	69.8	68.9	68.9	66.2	66.2		72.3	72.3
00020 AIR TEMP CENT							19.2	
00025 BAROMTRC PRESSURE MM OF HG							723	
00032 CLOUD COVER PERCENT							100	
00035 WIND VELOCITY MPH							17.0	
00036 WIND DIR.FROM NORTH=0							200	
00077 TRANSP SECCHI INCHES							108	
00094 CNDUCTVY FIELD MICROMHO							798	798
00299 DO PROBE MG/L							7.8	7.8
00301 DO SATUR PERCENT							88.6	88.6
00400 PH SU							8.30	8.30
00610 NH3+NH4- N TOTAL MG/L						0.200		
00619 UN-IONZD NH3-NH3 MG/L						0.030		
00620 NO3-N TOTAL MG/L						0.000		
00665 PHOS-TOT MG/L P						0.050		

INITIAL DATE	80/07/08	80/07/08	80/07/08	80/07/08	80/07/08	80/07/08	80/07/08	80/08/05
INITIAL TIME-DEPTH-BOTTOM	1415 0016	1415 0032	1415 0065	1415 0075	1415 0005	1430 0005	1430 0005	1020 0000
FINAL DATE					80/07/08	80/07/08	80/07/08	
FINAL TIME-NUMBER OF SAMPLES					1430 6	1440 6	1450 6	
CP-SPACE OR TIME-STATISTICAL FUNC					CP=S	CP=S	CP=S	
00010 WATER TEMP CENT	22.4	22.4	21.4	20.5				23.0
00011 WATER TEMP FAHN	72.3	72.3	70.5	68.9				73.4
00020 AIR TEMP CENT								27.0
00032 CLOUD COVER PERCENT								0
00035 WIND VELOCITY MPH								2.0
00036 WIND DIR.FROM NORTH=0								360
00062 WATER SURF ELE IN FEET								1420.2
00076 TURB TRBIDMTR HACH FTU						5.0	5.0	
00094 CNDUCTVY FIELD MICROMHO	798	799	800	800				
00299 DO PROBE MG/L	7.8	7.8	7.0	6.0				
00301 DO SATUR PERCENT	88.6	88.6	77.8	66.7				
00400 PH SU	8.30	8.30	8.20	8.10				
00410 T ALK CACO3 MG/L						166	166	
00515 RESIDUE DISS-105 C MG/L						548	546	
00530 RESIDUE TOT NFLT MG/L						6	6	
00610 NH3+NH4- N TOTAL MG/L						0.020	0.020	
00619 UN-IONZD NH3-NH3 MG/L						0.000	0.000	
00620 NO3-N TOTAL MG/L						0.000	0.000	
00665 PHOS-TOT MG/L P						0.030	0.030	
00900 TOT HARD CACO3 MG/L						255	255	
00916 CALCIUM CA-TOT MG/L						61.0	61.0	
00927 MGNSIUM MG,TOT MG/L						25.0	25.0	
00929 SODIUM NA,TOT MG/L						81.00	81.00	
00931 SODIUM ADSBTION RATIO						2.2	2.2	
00940 CHLORIDE TOTAL MG/L						10	10	
00945 SULFATE SO4-TOT MG/L						232	232	
01022 BORON B,TOT UG/L						136	136	
32216 CHLRPHYL TOTAL UG/L					24.00			
70507 PHOS-T ORTHO MG/L P						0.000	0.000	
71900 MERCURY HG,TOTAL UG/L						0.3		

INITIAL DATE	80/08/05	80/08/05	80/08/05	80/08/05	80/08/05	80/08/12	80/08/12	80/08/12
INITIAL TIME-DEPTH-BOTTOM	1020 0006	1020 0016	1020 0032	1020 0055	1020 0005	1535 0000	1535 0006	1535 0016
FINAL DATE					80/08/05			
FINAL TIME-NUMBER OF SAMPLES					1040 6			
CP-SPACE OR TIME-STATISTICAL FUNC					CP=S			
00010 WATER TEMP CENT	23.0	23.0	23.0	22.5		22.4	22.3	22.1
00011 WATER TEMP FAHN	73.4	73.4	73.4	72.5		72.3	72.1	71.8
00020 AIR TEMP CENT						27.0		
00025 BAROMTRC PRESSURE MM OF HG						723		
00032 CLOUD COVER PERCENT						20		
00035 WIND VELOCITY MPH						20.0		
00036 WIND DIR.FROM NORTH=0						180		
00076 TURB TRBIDMTR HACH FTU					7.0			
00077 TRANSP SECCHI INCHES						60		
00094 CNDUCTVY FIELD MICROMHO						804	805	805
00299 DO PROBE MG/L						8.3	8.4	8.2
00301 DO SATUR PERCENT						94.3	95.5	93.2
00400 PH SU						8.10	8.10	8.10
00410 T ALK CACO3 MG/L					174			
00515 RESIDUE DISS-105 C MG/L					598			
00530 RESIDUE TOT NFLT MG/L					16			
00610 NH3+NH4- N TOTAL MG/L					0.110			
00619 UN-IONZD NH3-NH3 MG/L					0.020			
00620 NO3-N TOTAL MG/L					0.000			
00665 PHOS-TOT MG/L P					0.030			
00900 TOT HARD CACO3 MG/L					266			
00916 CALCIUM CA-TOT MG/L					62.0			
00927 MGNSIUM MG,TOT MG/L					27.0			
00940 CHLORIDE TOTAL MG/L					11			
00945 SULFATE SO4-TOT MG/L					233			
70507 PHOS-T ORTHO MG/L P					0.000			

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

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      INITIAL DATE                            80/08/12  80/08/12  80/08/12  80/08/12  80/08/12  80/09/09  80/09/09  80/09/09
      INITIAL TIME-DEPTH-BOTTOM               1535 0032 1535 0065 1535 0072 1535 0005 1600 0005 1535 0000 1535 0006 1535 0016
      FINAL DATE                                                            80/08/12  80/08/12
      FINAL TIME-NUMBER OF SAMPLES                                          1555 6    1620 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                     CP=S      CP=S
00010  WATER      TEMP       CENT             21.8      21.6      21.6                          21.3      21.3      21.0
00011  WATER      TEMP       FAHN             71.2      70.9      70.9                          70.3      70.3      69.8
00020   AIR       TEMP       CENT                                                               22.2
00025 BAROMTRL  PRESSURE   MM OF HG                                                              732
00032  CLOUD      COVER     PERCENT                                                               20
00035   WIND    VELOCITY     MPH                                                                15.0
00036   WIND    DIR.FROM   NORTH=0                                                               315
00076   TURB    TRBIDMTR   HACH FTU                                                   3.0
00077  TRANSP    SECCHI     INCHES                                                               120
00094 CNDUCTVY  FIELD      MICROMHO            806       805       805                           802       802       801
00299    DO       PROBE      MG/L              7.6       7.4       7.2                           7.6       7.6       7.7
00301    DO       SATUR     PERCENT           88.4      84.1      81.8                          86.7      86.7      85.6
00400    PH                   SU              8.00      8.00      8.00                          8.20      8.20      8.20
00410  T ALK      CACO3      MG/L                                                     172
00515 RESIDUE   DISS-105  C MG/L                                                      512
00530 RESIDUE   TOT NFLT     MG/L                                                       4
00610 NH3+NH4-  N TOTAL      MG/L                                                   0.030
00619 UN-IONZD   NH3-NH3     MG/L                                                   0.000
00620  NO3-N     TOTAL       MG/L                                                   0.010
00625 TOT KJEL     N         MG/L                                                   0.500
00665 PHOS-TOT              MG/L P                                                  0.010
00720 CYANIDE     CN-TOT     MG/L                                                   0.000
00900 TOT HARD   CACO3       MG/L                                                     258
00916 CALCIUM    CA-TOT      MG/L                                                    65.0
00927 MGNSIUM   MG,TOT       MG/L                                                    23.0
00929 SODIUM    NA,TOT       MG/L                                                   73.00
00931  SODIUM   ADSBTION    RATIO                                                     2.0
00940 CHLORIDE    TOTAL      MG/L                                                      10
00945 SULFATE   SO4-TOT      MG/L                                                     229
01002 ARSENIC   AS,TOT       UG/L                                                       2
01012 BERYLIUM  BE,TOT       UG/L                                                    0.00
01022 BORON     B,TOT        UG/L                                                     190
01027 CADMIUM   CD,TOT       UG/L                                                       2
01034 CHROMIUM  CR,TOT       UG/L                                                      10
01042 COPPER    CU,TOT       UG/L                                                       0
01045   IRON    FE,TOT       UG/L                                                     243
01051 LEAD      PB,TOT       UG/L                                                       0
01055 MANGNESE    MN         UG/L                                                    44.0
01067  NICKEL   NI,TOTAL     UG/L                                                      16
01077 SILVER    AG,TOT       UG/L                                                     0.0
01092 ZINC      ZN,TOT       UG/L                                                      25
01105 ALUMINUM   AL,TOT      UG/L                                                      40
01132 LITHIUM   LI,TOT       UG/L                                                      52
01147 SELENIUM  SE,TOT       UG/L                                                       2
32216 CHLRPHYL   TOTAL       UG/L                                         1.00
39516   PCBS    WHL SMPL     UG/L                                                   0.000
70507  PHOS-T    ORTHO      MG/L P                                                  0.000
71900 MERCURY   HG,TOTAL     UG/L                                                     0.3
      INITIAL DATE                            80/09/09  80/09/09  80/09/09  80/09/09  80/09/11  80/09/11  80/09/11  80/09/11
      INITIAL TIME-DEPTH-BOTTOM               1535 0032 1535 0065 1535 0005 1555 0005 1400 0000 1400 0006 1400 0016 1400 0032
      FINAL DATE                                                  80/09/09  80/09/09
      FINAL TIME-NUMBER OF SAMPLES                                1555 6    1620 6
      CP-SPACE OR TIME-STATISTICAL FUNC                           CP=S      CP=S
00010  WATER      TEMP       CENT             20.9      20.8                          24.0      23.0      22.0      22.0
00011  WATER      TEMP       FAHN             69.6      69.4                          75.2      73.4      71.6      71.6
00020   AIR       TEMP       CENT                                                     33.0
00032  CLOUD      COVER     PERCENT                                                     10
00035   WIND    VELOCITY     MPH                                                      10.0
00036   WIND    DIR.FROM   NORTH=0                                                     135
00076   TURB    TRBIDMTR   HACH FTU                               7.0       2.0
00094 CNDUCTVY  FIELD      MICROMHO            801       801
00299    DO       PROBE      MG/L              7.7       7.6
00301    DO       SATUR     PERCENT           85.6      84.4
00400    PH                   SU              8.20      8.20
00410  T ALK      CACO3      MG/L                                  174       172
00515 RESIDUE   DISS-105  C MG/L                                   594       580
00530 RESIDUE   TOT NFLT     MG/L                                    8         9
00610 NH3+NH4-  N TOTAL      MG/L                                0.150     0.000
00619 UN-IONZD   NH3-NH3     MG/L                                0.010     0.000
00620  NO3-N     TOTAL       MG/L                                0.000     0.000
00665 PHOS-TOT              MG/L P                               0.020     0.000
00720 CYANIDE     CN-TOT     MG/L                                          0.000
00900 TOT HARD   CACO3       MG/L                                  253       266
00916 CALCIUM    CA-TOT      MG/L                                           60.0
00927 MGNSIUM   MG,TOT       MG/L                                           28.0
00929 SODIUM    NA,TOT       MG/L                                          75.00
00931  SODIUM   ADSBTION    RATIO                                            2.0
00940 CHLORIDE    TOTAL      MG/L                                   11        10
00945 SULFATE   SO4-TOT      MG/L                                  233       233
01002 ARSENIC   AS,TOT       UG/L                                              2
01012 BERYLIUM  BE,TOT       UG/L                                           0.00
01022 BORON     B,TOT        UG/L                                            130
01027 CADMIUM   CD,TOT       UG/L                                              0
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MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

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      INITIAL DATE                          80/09/09  80/09/09  80/09/09  80/09/09  80/09/11  80/09/11  80/09/11  80/09/11
      INITIAL TIME-DEPTH-BOTTOM             1535 0032 1535 0065 1535 0005 1555 0005 1400 0000 1400 0006 1400 0016 1400 0032
      FINAL DATE                                                80/09/09  80/09/09
      FINAL TIME-NUMBER OF SAMPLES                              1555 6    1620 6
      CP-SPACE OR TIME-STATISTICAL FUNC                         CP=5      CP=5
01042 COPPER    CU,TOT      UG/L                                                 3
01045 IRON      FE,TOT      UG/L                                               116
01051 LEAD      PB,TOT      UG/L                                                 0
01055 MANGNESE  MN          UG/L                                              17.0
01067 NICKEL    NI,TOTAL    UG/L                                                 0
01077 SILVER    AG,TOT      UG/L                                               0.0
01092 ZINC      ZN,TOT      UG/L                                                13
01105 ALUMINUM  AL,TOT      UG/L                                               140
01132 LITHIUM   LI,TOT      UG/L                                                51
01147 SELENIUM  SE,TOT      UG/L                                                 2
32216 CHLRPHYL  TOTAL       UG/L                                              1.00
39516 PCBS      WHL SMPL    UG/L                                             0.000
70507 PHOS-T    ORTHO       MG/L P                                 0.000     0.000
71900 MERCURY   HG,TOTAL    UG/L                                               0.3
      INITIAL DATE                          80/09/11  80/10/07  80/10/07  80/10/07  80/10/07  80/10/07  80/10/07  80/10/07
      INITIAL TIME-DEPTH-BOTTOM             1400 0052 1325 0000 1325 0006 1325 0016 1325 0032 1325 0065 1325 0071 1350 0005
      FINAL DATE                                                                                                  80/10/07
      FINAL TIME-NUMBER OF SAMPLES                                                                                1410 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                                                           CP=5
00010 WATER     TEMP        CENT                22.0      16.5      16.4      15.8      15.6      15.5      15.5
00011 WATER     TEMP        FAHN                71.6      61.7      61.5      60.4      60.1      59.9      59.9
00020 AIR       TEMP        CENT                          25.0
00025 BAROMTRC  PRESSURE    MM OF HG                       724
00032 CLOUD     COVER       PERCENT                          0
00035 WIND      VELOCITY    MPH                           10.0
00036 WIND      DIR.FROM    NORTH=0                        315
00076 TURB      TRBIDMTR    HACH FTU                                                                               4.0
00077 TRANSP    SECCHI      INCHES                         132
00094 CNDUCTVY  FIELD       MICROMHO                       825       824       824       823       823       823
00299 DO        PROBE       MG/L                           9.1       9.1       9.1       9.0       8.8       8.8
00301 DO        SATUR       PERCENT                       93.6      91.0      91.0      90.0      88.0      88.0
00400 PH                    SU                            8.30      8.30      8.30      8.30      8.30      8.30
00410 T ALK     CACO3       MG/L                                                                                   170
00515 RESIDUE   DISS-105    C MG/L                                                                                 500
00530 RESIDUE   TOT NFLT    MG/L                                                                                     8
00610 NH3+NH4-  N TOTAL     MG/L                                                                                 0.020
00619 UN-IONZD  NH3-NH3     MG/L                                                                                 0.000
00620 NO3-N     TOTAL       MG/L                                                                                 0.000
00665 PHOS-TOT              MG/L P                                                                               0.010
00900 TOT HARD  CACO3       MG/L                                                                                   251
00916 CALCIUM   CA-TOT      MG/L                                                                                  58.0
00927 MGNSIUM   MG,TOT      MG/L                                                                                  26.0
00940 CHLORIDE  TOTAL       MG/L                                                                                     9
00945 SULFATE   SO4-TOT     MG/L                                                                                   230
32216 CHLRPHYL  TOTAL       UG/L                                                                                  2.00
60050 ALGAE     TOTAL       /ML                                                                                   7510
70507 PHOS-T    ORTHO       MG/L P                                                                               0.000
71000 ABUNDANT  ALGCOUNT    1ST DOM                                                                               3220
71001 ABUNDANT  ALGCOUNT    2ND DOM                                                                               2860
71002 ABUNDANT  ALGCOUNT    3RD DOM                                                                               1070
71003 ABUNDANT  ALGCOUNT    4TH DOM                                                                                360
71010 ABUNDANT  ALGGENUS    1ST DOM                                                                                 77
71011 ABUNDANT  ALGGENUS    2ND DOM                                                                                 69
71012 ABUNDANT  ALGGENUS    3RD DOM                                                                                 71
71013 ABUNDANT  ALGGENUS    4TH DOM                                                                                 39
71900 MERCURY   HG,TOTAL    UG/L                                                                                   0.2
      INITIAL DATE                          81/04/23  81/04/23  81/04/23  81/04/23  81/04/23  81/04/23  81/04/23  81/05/19
      INITIAL TIME-DEPTH-BOTTOM             1455 0000 1455 0006 1455 0016 1455 0032 1455 0065 1455 0068 1455 0005 1150 0000
      FINAL DATE                                                                                        81/04/23
      FINAL TIME-NUMBER OF SAMPLES                                                                      1515 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                                                 CP=5
00010 WATER     TEMP        CENT                10.1      10.0       9.8       9.1       9.0       9.0                12.8
00011 WATER     TEMP        FAHN                50.2      50.0      49.6      48.4      48.2      48.2                55.0
00020 AIR       TEMP        CENT                16.5                                                                  22.5
00025 BAROMTRC  PRESSURE    MM OF HG             720                                                                     7
00032 CLOUD     COVER       PERCENT               60                                                                     0
00035 WIND      VELOCITY    MPH                 15.0                                                                   5.0
00036 WIND      DIR.FROM    NORTH=0              315                                                                   180
00076 TURB      TRBIDMTR    HACH FTU                                                                         1.0
00077 TRANSP    SECCHI      INCHES                84                                                                   120
00094 CNDUCTVY  FIELD       MICROMHO             813       814       814       812       812       812                 844
00299 DO        PROBE       MG/L                10.3      10.4      10.5      10.5      10.5      10.5                 9.5
00301 DO        SATUR       PERCENT             91.2      92.0      92.9      90.5      90.5      90.5                89.6
00400 PH                    SU                  8.50      8.50      8.50      8.50      8.50      8.50                8.30
00410 T ALK     CACO3       MG/L                                                                         180
00515 RESIDUE   DISS-105    C MG/L                                                                       554
00530 RESIDUE   TOT NFLT    MG/L                                                                          20
00610 NH3+NH4-  N TOTAL     MG/L                                                                       0.010
00619 UN-IONZD  NH3-NH3     MG/L                                                                       0.000
00620 NO3-N     TOTAL       MG/L                                                                       0.000
00665 PHOS-TOT              MG/L P                                                                     0.020
00720 CYANIDE   CN-TOT      MG/L                                                                       0.000
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MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

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      INITIAL DATE                                81/04/23  81/04/23  81/04/23  81/04/23  81/04/23  81/04/23  81/04/23  81/05/19
      INITIAL TIME-DEPTH-BOTTOM                   1455 0000 1455 0006 1455 0016 1455 0032 1455 0065 1455 0068 1455 0005 1150 0000
      FINAL DATE                                                                                               81/04/23
      FINAL TIME-NUMBER OF SAMPLES                                                                             1515 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                                                        CP-S
00900 TOT HARD    CACO3       MG/L                                                                              266
00916 CALCIUM     CA-TOT      MG/L                                                                              62.0
00927 MGNSIUM    MG,TOT       MG/L                                                                              27.0
00929 SODIUM     NA,TOT       MG/L                                                                             88.00
00931  SODIUM    ADSORTION   RATIO                                                                               2.3
00940 CHLORIDE     TOTAL      MG/L                                                                               11
00945 SULFATE    SO4-TOT      MG/L                                                                              230
01002 ARSENIC    AS,TOT       UG/L                                                                                2
01012 BERYLIUM   BE,TOT       UG/L                                                                              2.00
01022 BORON      B,TOT        UG/L                                                                              160
01027 CADMIUM    CD,TOT       UG/L                                                                                0
01042 COPPER     CU,TOT       UG/L                                                                                1
01045   IRON     FE,TOT       UG/L                                                                              120
01051 LEAD       PB,TOT       UG/L                                                                                0
01055 MANGNESE      MN        UG/L                                                                              16.0
01067  NICKEL    NI,TOTAL     UG/L                                                                               11
01077 SILVER     AG,TOT       UG/L                                                                              0.0
01092 ZINC       ZN,TOT       UG/L                                                                               14
01105 ALUMINUM    AL,TOT      UG/L                                                                              145
01132 LITHIUM    LI,TOT       UG/L                                                                               48
01147 SELENIUM   SE,TOT       UG/L                                                                                1
32230 CHLRPHYL      A         MG/L                                                                             0.006
39516   PCBS     AML SMPL     UG/L                                                                             0.000
70507  PHOS-T     ORTHO      MG/L P                                                                            0.000
71900 MERCURY    HG,TOTAL     UG/L                                                                               0.0
      INITIAL DATE                                81/05/19  81/05/19  81/05/19  81/05/19  81/05/19  81/05/19  81/06/16  81/06/16
      INITIAL TIME-DEPTH-BOTTOM                   1150 0006 1150 0016 1150 0032 1150 0065 1150 0072 1215 0005 1330 0000 1330 0006
      FINAL DATE                                                                                     81/05/19
      FINAL TIME-NUMBER OF SAMPLES                                                                   1230 6
      CP-SPACE OR TIME-STATISTICAL FUNC                                                              CP-S
00010  WATER        TEMP       CENT               12.6      12.2      12.0      11.9      11.9                 18.7      18.6
00011  WATER        TEMP       FAHN               54.7      54.0      53.6      53.4      53.4                 65.7      65.5
00020   AIR         TEMP       CENT                                                                            22.0
00025 BAROMTRC   PRESSURE   MM OF HG                                                                            729
00032  CLOUD       COVER     PERCENT                                                                              0
00035   WIND     VELOCITY      MPH                                                                              8.0
00036   WIND     DIR.FROM   NORTH=0                                                                             270
00076   TURB     TRBIDMTR   HACH FTU                                                                 2.0
00077  TRANSP     SECCHI     INCHES                                                                              84
00094 CNDUCTVY  FIELD       MICROMHO               844       843       842       841       841                  827       827
00299    DO       PROBE       MG/L                 9.5       9.5       9.4       9.3       9.2                  8.0       8.0
00301    DO       SATUR     PERCENT               89.6      88.0      87.0      86.1      85.2                 85.1      85.1
00400    PH                     SU                8.30      8.30      8.30      8.30      8.30                 8.30      8.30
00410  T ALK      CACO3       MG/L                                                                   180
00515 RESIDUE   DISS-105  C MG/L                                                                     594
00530 RESIDUE   TOT NFLT      MG/L                                                                     4
00610 NH3+NH4-  N TOTAL       MG/L                                                                 0.060
00619 UN-IONZD   NH3-NH3      MG/L                                                                 0.000
00620  NO3-N      TOTAL       MG/L                                                                 0.000
00665 PHOS-TOT               MG/L P                                                                0.010
00900 TOT HARD    CACO3       MG/L                                                                   276
00916 CALCIUM     CA-TOT      MG/L                                                                  67.0
00927 MGNSIUM    MG,TOT       MG/L                                                                  26.0
00940 CHLORIDE     TOTAL      MG/L                                                                    13
00945 SULFATE    SO4-TOT      MG/L                                                                   243
32216 CHLRPHYL    TOTAL       UG/L                                                                  6.00
70507  PHOS-T     ORTHO      MG/L P                                                                0.000
71900 MERCURY    HG,TOTAL     UG/L                                                                   0.4
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BEST DOCUMENT AVAILABLE

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

INITIAL DATE	81/06/16	81/06/16	81/06/16	81/06/16	81/06/16	81/06/16	81/07/14	81/07/14
INITIAL TIME-DEPTH-BOTTOM	1330 0016	1330 0032	1330 0065	1330 0072	1330 0005	1350 0005	1125 0000	1125 0006
FINAL DATE					81/06/16	81/06/16		
FINAL TIME-NUMBER OF SAMPLES					1350 6	1405 6		
CP-SPACE OR TIME-STATISTICAL FUNC					CP-S	CP-S		
00010 WATER TEMP CENT	18.6	18.5	18.1	18.1			23.5	23.5
00011 WATER TEMP FAHN	65.5	65.3	64.6	64.6			74.3	74.3
00020 AIR TEMP CENT							24.5	
00025 BAROMTRC PRESSURE MM OF HG							725	
00032 CLOUD COVER PERCENT							100	
00035 WIND VELOCITY MPH							12.0	
00036 WIND DIR.FROM NORTH-0							315	
00065 STREAM STAGE FEET							72.00	
00076 TURB TRBIDMTR HACH FTU					3.0			
00077 TRANSP SECCHI INCHES							156	
00094 CNDUCTVY FIELD MICROMHO	827	826	825	825			612	612
00299 DO PROBE MG/L	8.0	7.9	7.9	7.9			7.1	7.1
00301 DO SATUR PERCENT	85.1	84.0	83.2	83.2			83.5	83.5
00400 PH SU	8.30	8.30	8.30	8.30			8.30	8.30
00410 T ALK CACO3 MG/L					176			
00515 RESIDUE DISS-105 C MG/L					596			
00530 RESIDUE TOT NFLT MG/L					11			
00610 NH3+NH4- N TOTAL MG/L					0.020			
00619 UN-IONZD NH3-NH3 MG/L					0.000			
00620 NO3-N TOTAL MG/L					0.000			
00665 PHOS-TOT MG/L P					0.010			
00900 TOT HARD CACO3 MG/L					265			
00916 CALCIUM CA-TOT MG/L					62.0			
00927 MGNSIUM MG,TOT MG/L					31.0			
00940 CHLORIDE TOTAL MG/L					12			
00945 SULFATE SO4-TOT MG/L					246			
32216 CHLRPHYL TOTAL UG/L						36.00		
70507 PHOS-T ORTHO MG/L P					0.000			
71900 MERCURY HG,TOTAL UG/L					0.0			

INITIAL DATE	81/07/14	81/07/14	81/07/14	81/07/14	81/07/14	81/08/07	81/08/07	81/08/07
INITIAL TIME-DEPTH-BOTTOM	1125 0016	1125 0032	1125 0065	1125 0071	1125 0005	0900 0000	0900 0006	0900 0016
FINAL DATE					81/07/14			
FINAL TIME-NUMBER OF SAMPLES					1145 6			
CP-SPACE OR TIME-STATISTICAL FUNC					CP-S			
00010 WATER TEMP CENT	23.3	23.1	22.7	22.4		25.0	24.0	24.0
00011 WATER TEMP FAHN	73.9	73.6	72.9	72.3		77.0	75.2	75.2
00020 AIR TEMP CENT						17.0		
00032 CLOUD COVER PERCENT						0		
00035 WIND VELOCITY MPH						20.0		
00036 WIND DIR.FROM NORTH-0						315		
00062 WATER SURF ELE IN FEET						1420.8		
00094 CNDUCTVY FIELD MICROMHO	612	612	612	610				
00299 DO PROBE MG/L	7.0	6.9	6.7	6.6				
00301 DO SATUR PERCENT	80.5	79.3	77.0	75.0				
00400 PH SU	8.30	8.30	8.30	8.30				
32216 CHLRPHYL TOTAL UG/L					6.00			

INITIAL DATE	81/08/07	81/08/07	81/08/07	81/08/11	81/08/11	81/08/11	81/08/11	81/08/11
INITIAL TIME-DEPTH-BOTTOM	0900 0032	0900 0065	0900 0005	1050 0000	1050 0006	1050 0016	1050 0032	1050 0065
FINAL DATE			81/08/07					
FINAL TIME-NUMBER OF SAMPLES			1000 6					
CP-SPACE OR TIME-STATISTICAL FUNC			CP-S					
00010 WATER TEMP CENT	24.0	24.0		23.4	23.2	23.2	23.1	22.9
00011 WATER TEMP FAHN	75.2	75.2		74.1	73.8	73.8	73.6	73.2
00020 AIR TEMP CENT				20.5				
00025 BAROMTRC PRESSURE MM OF HG				726				
00032 CLOUD COVER PERCENT				0				
00035 WIND VELOCITY MPH				0.0				
00076 TURB TRBIDMTR HACH FTU			10.0					
00077 TRANSP SECCHI INCHES				156				
00094 CNDUCTVY FIELD MICROMHO				820	823	823	824	823
00299 DO PROBE MG/L				7.6	7.7	7.6	7.4	7.0
00301 DO SATUR PERCENT				87.4	88.5	87.4	85.1	80.5
00400 PH SU				8.20	8.20	8.20	8.20	8.20
00410 T ALK CACO3 MG/L			172					
00515 RESIDUE DISS-105 C MG/L			528					
00530 RESIDUE TOT NFLT MG/L			6					
00610 NH3+NH4- N TOTAL MG/L			0.290					
00620 NO3-N TOTAL MG/L			0.000					
00665 PHOS-TOT MG/L P			0.020					
00900 TOT HARD CACO3 MG/L			267					
00940 CHLORIDE TOTAL MG/L			14					
00945 SULFATE SO4-TOT MG/L			233					
32216 CHLRPHYL TOTAL UG/L			2.00					
70507 PHOS-T ORTHO MG/L P			0.000					

MISSOURI RIVER MAIN STEM

LAKE SHARPE NEAR DAM, SD (LAT 44 02 32 LONG 99 26 57)--Continued

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     INITIAL DATE                      81/08/11  81/08/11  81/08/11  81/09/08  81/09/08  81/09/08  81/09/08  81/09/08
     INITIAL TIME-DEPTH-BOTTOM         1050 0072 1050 0005 1105 0005 1900 0000 1900 0006 1900 0016 1900 0032 1900 0062
     FINAL DATE                                  81/08/11  81/08/11
     FINAL TIME-NUMBER OF SAMPLES                1105 6    1120 6
     CP-SPACE OR TIME-STATISTICAL FUNC           CP-S      CP-S
00010 WATER     TEMP      CENT          22.9                           23.0      23.0      23.0      21.0      19.0
00011 WATER     TEMP      FAHR          73.2                           73.4      73.4      73.4      69.8      66.2
00020 AIR       TEMP      CENT                                         20.0
00032 CLOUD     COVER     PERCENT                                         0
00036 WIND      DIR.FROM  NORTH-0                                        14
00062 WATER     SURF ELE  IN FEET                                    1420.6
00076 TURB      TRBIDMTR  HACH FTU                         3.0
00094 CNDUCTVY  FIELD     MICROMHO       823
00299 DO        PROBE     MG/L           6.8
00301 DO        SATUR     PERCENT       78.2
00400 PH                  SU            8.20
00410 T ALK     CACO3     MG/L                             173
00515 RESIDUE   DISS-105  C MG/L                           608
00530 RESIDUE   TOT NFLT  MG/L                               3
00610 NH3+NH4-  N TOTAL   MG/L                           0.010
00620 NO3-N     TOTAL     MG/L                           0.000
00665 PHOS-TOT            MG/L P                         0.010
00900 TOT HARD  CACO3     MG/L                             273
00916 CALCIUM   CA-TOT    MG/L                            60.0
00927 MGNSIUM   MG,TOT    MG/L                            30.0
00940 CHLORIDE  TOTAL     MG/L                              12
00945 SULFATE   SO4-TOT   MG/L                             253
32216 CHLRPHYL  TOTAL     UG/L                4.00
70507 PHOS-T    ORTHO     MG/L P                         0.000
71900 MERCURY   HG,TOTAL  UG/L                             0.5
     INITIAL DATE                      81/09/08
     INITIAL TIME-DEPTH-BOTTOM         1900 0005
     FINAL DATE                        81/09/08
     FINAL TIME-NUMBER OF SAMPLES      1930 6
     CP-SPACE OR TIME-STATISTICAL FUNC CP-S
00076 TURB      TRBIDMTR  HACH FTU      15.0
00410 T ALK     CACO3     MG/L           166
00515 RESIDUE   DISS-105  C MG/L         588
00530 RESIDUE   TOT NFLT  MG/L            21
00610 NH3+NH4-  N TOTAL   MG/L         0.090
00620 NO3-N     TOTAL     MG/L         0.010
00665 PHOS-TOT            MG/L P       0.030
00900 TOT HARD  CACO3     MG/L           264
00940 CHLORIDE  TOTAL     MG/L            11
00945 SULFATE   SO4-TOT   MG/L           255
32216 CHLRPHYL  TOTAL     UG/L          0.00
70507 PHOS-T    ORTHO     MG/L P       0.010
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BEST DOCUMENT AVAILABLE

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW AT BIG BEND, SD (LAT 44 02 13 LONG 99 26 18)

INITIAL DATE	80/10/07	80/10/07	81/04/23	81/04/23	81/05/19	81/05/19	81/07/14	81/08/11
INITIAL TIME-DEPTH-BOTTOM	1420 0000	1425	1545 0000	1545 0001	1300	1315 0000	1230 0000	1140 0000
00010 WATER TEMP CENT	16.1			10.3		12.8	23.5	24.3
00011 WATER TEMP FAHN	61.0			50.5		55.0	74.3	75.7
00020 AIR TEMP CENT	26.6		16.5			21.5	24.5	22.0
00025 BAROMTRC PRESSURE MM OF HG	724		720			7	725	728
00032 CLOUD COVER PERCENT	0		60			0	100	0
00035 WIND VELOCITY MPH	10.0		15.0			10.0	12.0	0.0
00036 WIND DIR.FROM NORTH-0	315		315			180	315	
00061 STREAM FLOW, INST-CFS	310		25000			0	65000	0
00076 TURB TRBIDMTR HACH FTU		3.0	2.0		1.0			
00094 CNDUCTVY FIELD MICROMHO	620			811		836	807	812
00299 DO PROBE MG/L	6.9			10.4		9.3	6.7	6.6
00301 DO SATUR PERCENT	89.0			92.0		87.7	78.8	77.6
00400 PH SU	8.30			8.50		8.20	8.20	8.10
00410 T ALK CACO3 MG/L		175	197		178			
00515 RESIDUE DISS-105 C MG/L		556	558		516			
00530 RESIDUE TOT NFLT MG/L		3	15		3			
00610 NH3+NH4- N TOTAL MG/L		0.000	0.000		0.050			
00619 UN-IONZD NH3-NH3 MG/L		0.000	0.000		0.000			
00620 NO3-N TOTAL MG/L		0.000	0.000		0.020			
00625 TOT KJEL N MG/L			0.200		0.500			
00665 PHOS-TOT MG/L P		0.000	0.020		0.030			
00720 CYANIDE CN-TOT MG/L			0.000					
00900 TOT HARD CACO3 MG/L		270	266		269			
00916 CALCIUM CA-TOT MG/L		62.0	62.0		66.0			
00927 MGNSIUM MG,TOT MG/L		28.0	27.0		26.0			
00929 SODIUM NA,TOT MG/L			87.00					
00931 SODIUM ADSBTION RATIO			2.3					
00940 CHLORIDE TOTAL MG/L		10	11		11			
00945 SULFATE SO4-TOT MG/L		233	233		253			
01002 ARSENIC AS,TOT UG/L			2					
01012 BERYLIUM BE,TOT UG/L			0.00					
01022 BORON B,TOT UG/L			130					
01027 CADMIUM CD,TOT UG/L			0					
01034 CHROMIUM CR,TOT UG/L			0					
01042 COPPER CU,TOT UG/L			0					
01045 IRON FE,TOT UG/L			136					
01051 LEAD PB,TOT UG/L			0					
01055 MANGNESE MN UG/L			16.0					
01067 NICKEL NI,TOTAL UG/L			11					
01077 SILVER AG,TOT UG/L			0.0					
01092 ZINC ZN,TOT UG/L			3					
01105 ALUMINUM AL,TOT UG/L			184					
01132 LITHIUM LI,TOT UG/L			42					
01147 SELENIUM SE,TOT UG/L			1					
39516 PCBS WHL SMPL UG/L			0.000					
70507 PHOS-T ORTHO MG/L P		0.000	0.000		0.000			
71900 MERCURY HG,TOTAL UG/L		0.0	0.0		0.0			

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LAKE FRANCIS CASE NEAR ELM CREEK, SD (LAT 43 33 38 LONG 99 19 20)

	INITIAL DATE	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08
	INITIAL TIME-DEPTH-BOTTOM	0840 0000	0840 0001	0840 0003	0840 0009	0840 0016	0840 0022	0840 0027	0855 0005
	FINAL DATE								80/10/08
	FINAL TIME-NUMBER OF SAMPLES								0915 6
	CP-SPACE OR TIME-STATISTICAL FUNC								CP-S
00010	WATER TEMP CENT	15.3	15.4	15.4	15.4	15.3	15.3	15.3	
00011	WATER TEMP FAHN	59.5	59.7	59.7	59.7	59.5	59.5	59.5	
00020	AIR TEMP CENT	11.5							
00025	BAROMTRC PRESSURE MM OF HG	728							
00032	CLOUD COVER PERCENT	0							
00035	WIND VELOCITY MPH	5.0							
00036	WIND DIR.FROM NORTH-0	315							
00076	TURB TRBIDMTR HACH FTU								12.0
00077	TRANSP SECCHI INCHES	36							
00094	CNDUCTVY FIELD MICROMHO	828	828	829	832	832	832	832	
00299	DO PROBE MG/L	9.2	9.3	9.3	9.3	9.3	9.3	9.3	
00301	DO SATUR PERCENT	90.2	91.2	91.2	91.2	91.2	91.2	91.2	
00400	PH SU	8.20	8.30	8.30	8.30	8.30	8.30	8.30	
00410	T ALK CACO3 MG/L								175
00515	RESIDUE DISS-105 C MG/L								540
00530	RESIDUE TOT NFLT MG/L								11
00610	NH3+NH4- N TOTAL MG/L								0.030
00619	UN-IONZD NH3-NH3 MG/L								0.000
00620	NO3-N TOTAL MG/L								0.000
00665	PHOS-TOT MG/L P								0.030
00900	TOT HARD CACO3 MG/L								261
00916	CALCIUM CA-TOT MG/L								63.0
00927	MGNSIUM MG,TOT MG/L								25.0
00940	CHLORIDE TOTAL MG/L								10
00945	SULFATE SO4-TOT MG/L								230
32216	CHLRPHYL TOTAL UG/L								6.00
70507	PHOS-T ORTHO MG/L P								0.000
71900	MERCURY HG,TOTAL UG/L								0.2
	INITIAL DATE	80/10/08	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22
	INITIAL TIME-DEPTH-BOTTOM	1255 0005	0820 0000	0820 0001	0820 0003	0820 0009	0820 0016	0820 0022	0820 0029
	FINAL DATE	80/10/08							
	FINAL TIME-NUMBER OF SAMPLES	1315 6							
	CP-SPACE OR TIME-STATISTICAL FUNC	CP-S							
00010	WATER TEMP CENT		10.5	10.5	10.5	10.5	10.4	10.4	10.4
00011	WATER TEMP FAHN		50.9	50.9	50.9	50.9	50.7	50.7	50.7
00020	AIR TEMP CENT		10.0						
00025	BAROMTRC PRESSURE MM OF HG		719						
00032	CLOUD COVER PERCENT		90						
00035	WIND VELOCITY MPH		25.0						
00036	WIND DIR.FROM NORTH-0		270						
00077	TRANSP SECCHI INCHES		3						
00094	CNDUCTVY FIELD MICROMHO		818	818	817	817	817	818	817
00299	DO PROBE MG/L		10.5	10.5	10.5	10.5	10.5	10.5	10.5
00301	DO SATUR PERCENT		94.6	94.6	94.6	94.6	92.9	92.9	92.9
00400	PH SU		8.30	8.30	8.30	8.30	8.40	8.40	8.30
60050	ALGAE TOTAL /ML	28300							
71000	ABUNDANT ALGCOUNT 1ST DOM	16800							
71001	ABUNDANT ALGCOUNT 2ND DOM	7870							
71002	ABUNDANT ALGCOUNT 3RD DOM	2860							
71003	ABUNDANT ALGCOUNT 4TH DOM	710							
71010	ABUNDANT ALGGENUS 1ST DOM	77							
71011	ABUNDANT ALGGENUS 2ND DOM	69							
71012	ABUNDANT ALGGENUS 3RD DOM	84							
71013	ABUNDANT ALGGENUS 4TH DOM	71							
	INITIAL DATE	81/04/22	81/04/22	81/05/20	81/05/20	81/05/20	81/05/20	81/05/20	81/05/20
	INITIAL TIME-DEPTH-BOTTOM	0820 0036	0820 0005	0800 0000	0800 0001	0800 0003	0800 0009	0800 0016	0800 0022
	FINAL DATE		81/04/22						
	FINAL TIME-NUMBER OF SAMPLES		0920 6						
	CP-SPACE OR TIME-STATISTICAL FUNC		CP-S						
00010	WATER TEMP CENT	10.4		12.8	12.8	12.8	12.8	12.8	12.8
00011	WATER TEMP FAHN	50.7		55.0	55.0	55.0	55.0	55.0	55.0
00020	AIR TEMP CENT			14.0					
00025	BAROMTRC PRESSURE MM OF HG			7					
00032	CLOUD COVER PERCENT			0					
00035	WIND VELOCITY MPH			12.0					
00036	WIND DIR.FROM NORTH-0			135					
00076	TURB TRBIDMTR HACH FTU		2.0						
00077	TRANSP SECCHI INCHES			48					
00094	CNDUCTVY FIELD MICROMHO	818		848	847	848	848	848	847
00299	DO PROBE MG/L	10.4		9.5	9.5	9.4	9.4	9.4	9.4
00301	DO SATUR PERCENT	92.0		89.6	89.6	88.7	88.7	88.7	88.7
00400	PH SU	8.30		8.30	8.20	8.20	8.20	8.20	8.30
00410	T ALK CACO3 MG/L		181						
00515	RESIDUE DISS-105 C MG/L		542						
00530	RESIDUE TOT NFLT MG/L		6						

MISSOURI RIVER MAIN STEM

LAKE FRANCIS CASE NEAR ELM CREEK, SD (LAT 43 33 38 LONG 99 19 20)--Continued

	INITIAL DATE			81/04/22	81/04/22	81/05/20	81/05/20	81/05/20	81/05/20	81/05/20	81/05/20
	INITIAL TIME-DEPTH-BOTTOM			0820 0036	0820 0005	0800 0000	0800 0001	0800 0003	0800 0009	0800 0016	0800 0022
	FINAL DATE				81/04/22						
	FINAL TIME-NUMBER OF SAMPLES				0920 6						
	CP-SPACE OR TIME-STATISTICAL FUNC				CP-S						
00610	NH3+NH4-	N TOTAL	MG/L		0.000						
00619	UN-IONZD	NH3-NH3	MG/L		0.000						
00620	NO3-N	TOTAL	MG/L		0.000						
00665	PHOS-TOT		MG/L P		0.030						
00720	CYANIDE	CN-TOT	MG/L		0.000						
00900	TOT HARD	CACO3	MG/L		267						
00916	CALCIUM	CA-TOT	MG/L		62.0						
00927	MGNSIUM	MG,TOT	MG/L		27.0						
00929	SODIUM	NA,TOT	MG/L		63.00						
00931	SODIUM	ADSBTION	RATIO		2.2						
00940	CHLORIDE	TOTAL	MG/L		12						
00945	SULFATE	SO4-TOT	MG/L		264						
01002	ARSENIC	AS,TOT	UG/L		1						
01012	BERYLIUM	BE,TOT	UG/L		0.00						
01022	BORON	B,TOT	UG/L		100						
01027	CADMIUM	CD,TOT	UG/L		1						
01034	CHROMIUM	CR,TOT	UG/L		0						
01042	COPPER	CU,TOT	UG/L		2						
01045	IRON	FE,TOT	UG/L		324						
01051	LEAD	PB,TOT	UG/L		0						
01055	MANGNESE	MN	UG/L		26.0						
01067	NICKEL	NI,TOTAL	UG/L		11						
01077	SILVER	AG,TOT	UG/L		0.0						
01092	ZINC	ZN,TOT	UG/L		14						
01105	ALUMINUM	AL,TOT	UG/L		500						
01132	LITHIUM	LI,TOT	UG/L		40						
01147	SELENIUM	SE,TOT	UG/L		1						
32230	CHLRPHYL	A	MG/L		0.000						
39516	PCBS	WHL SMPL	UG/L		0.000						
70507	PHOS-T	ORTHO	MG/L P		0.000						
71900	MERCURY	HG,TOTAL	UG/L		0.0						

	INITIAL DATE			81/05/20	81/05/20	81/05/20	81/05/20	81/06/16	81/06/16	81/06/16	81/06/16
	INITIAL TIME-DEPTH-BOTTOM			0800 0029	0800 0036	0800 0039	0820 0005	1545 0000	1545 0001	1545 0003	1545 0009
	FINAL DATE						81/05/20				
	FINAL TIME-NUMBER OF SAMPLES						0835 6				
	CP-SPACE OR TIME-STATISTICAL FUNC						CP-S				
00010	WATER	TEMP	CENT	12.8	12.8	12.8		19.9	19.9	19.9	19.5
00011	WATER	TEMP	FAHN	55.0	55.0	55.0		67.8	67.8	67.8	67.1
00020	AIR	TEMP	CENT					28.5			
00025	BAROMTRC	PRESSURE	MM OF HG					727			
00032	CLOUD	COVER	PERCENT					0			
00035	WIND	VELOCITY	MPH					9.0			
00036	WIND	DIR,FROM	NORTH=0					270			
00076	TURB	TRBIDMTR	HACH FTU				1.0				
00077	TRANSP	SECCHI	INCHES					36			
00094	CNDUCTVY	FIELD	MICROMHO	847	848	848		835	835	835	833
00299	DO	PROBE	MG/L	9.4	9.2	9.3		7.8	7.8	7.8	7.7
00301	DO	SATUR	PERCENT	88.7	86.8	87.7		84.8	84.8	84.8	83.7
00400	PH		SU	8.30	8.00	8.30		8.20	8.20	8.20	8.30
00410	T ALK	CACO3	MG/L				180				
00515	RESIDUE	DISS-105	C MG/L				562				
00530	RESIDUE	TOT NFLT	MG/L				9				
00610	NH3+NH4-	N TOTAL	MG/L				0.040				
00619	UN-IONZD	NH3-NH3	MG/L				0.000				
00620	NO3-N	TOTAL	MG/L				0.000				
00665	PHOS-TOT		MG/L P				0.020				
00900	TOT HARD	CACO3	MG/L				265				
00916	CALCIUM	CA-TOT	MG/L				66.0				
00927	MGNSIUM	MG,TOT	MG/L				24.0				
00940	CHLORIDE	TOTAL	MG/L				11				
00945	SULFATE	SO4-TOT	MG/L				237				
32216	CHLRPHYL	TOTAL	UG/L				1.00				
70507	PHOS-T	ORTHO	MG/L P				0.000				
71900	MERCURY	HG,TOTAL	UG/L				0.7				

MISSOURI RIVER MAIN STEM

LAKE FRANCIS CASE NEAR ELM CREEK, SD (LAT 43 33 38 LONG 99 19 20)--Continued

INITIAL DATE	81/06/16	81/06/16	81/06/16	81/06/16	81/06/16	81/06/16	81/07/14	81/07/14
INITIAL TIME-DEPTH-BOTTOM	1545 0016	1545 0022	1545 0029	1545 0036	1545 0005	1605 0005	1505 0000	1505 0001
FINAL DATE					81/06/16	81/06/16		
FINAL TIME-NUMBER OF SAMPLES					1605 6	1620 6		
CP-SPACE OR TIME-STATISTICAL FUNC					CP-S	CP-S		
00010 WATER TEMP CENT	19.3	19.3	19.3	19.2			24.8	24.8
00011 WATER TEMP FAHN	66.7	66.7	66.7	66.6			76.6	76.6
00025 BAROMTRC PRESSURE MM OF HG							727	
00032 CLOUD COVER PERCENT							100	
00035 WIND VELOCITY MPH							10.0	
00076 TURB TRBIDMTR HACH FTU					5.0			
00077 TRANSP SECCHI INCHES							60	
00094 CNDUCTVY FIELD MICROMHO	834	834	834	834			822	822
00299 DO PROBE MG/L	7.7	7.6	7.6	7.6			7.1	7.1
00301 DO SATUR PERCENT	81.9	80.9	80.9	80.9			84.5	84.5
00400 PH SU	8.30	8.30	8.30	8.30			8.30	8.20
00410 T ALK CACO3 MG/L					181			
00515 RESIDUE DISS-105 C MG/L					622			
00530 RESIDUE TOT NFLT MG/L					14			
00610 NH3+NH4- N TOTAL MG/L					0.010			
00619 UN-IONZD NH3-NH3 MG/L					0.000			
00620 NO3-N TOTAL MG/L					0.000			
00665 PHOS-TOT MG/L P					0.010			
00900 TOT HARD CACO3 MG/L					284			
00916 CALCIUM CA-TOT MG/L					61.0			
00927 MGNSIUM MG,TOT MG/L					32.0			
00940 CHLORIDE TOTAL MG/L					11			
00945 SULFATE SO4-TOT MG/L					266			
32216 CHLRPHYL TOTAL UG/L						37.00		
70507 PHOS-T ORTHO MG/L P					0.000			
71900 MERCURY HG,TOTAL UG/L					0.4			
INITIAL DATE	81/07/14	81/07/14	81/07/14	81/07/14	81/07/14	81/07/14	81/07/14	81/08/11
INITIAL TIME-DEPTH-BOTTOM	1505 0003	1505 0009	1505 0016	1505 0022	1505 0029	1505 0036	1505 0005	1430 0000
FINAL DATE							81/07/14	
FINAL TIME-NUMBER OF SAMPLES							1525 6	
CP-SPACE OR TIME-STATISTICAL FUNC							CP-S	
00010 WATER TEMP CENT	24.8	24.8	24.8	24.8	24.8	24.8		25.0
00011 WATER TEMP FAHN	76.6	76.6	76.6	76.6	76.6	76.6		77.0
00020 AIR TEMP CENT								30.5
00025 BAROMTRC PRESSURE MM OF HG								730
00032 CLOUD COVER PERCENT								0
00035 WIND VELOCITY MPH								5.0
00036 WIND DIR.FROM NORTH-0								270
00077 TRANSP SECCHI INCHES								72
00094 CNDUCTVY FIELD MICROMHO	822	822	822	822	822	822		813
00299 DO PROBE MG/L	7.1	7.1	7.1	7.1	7.1	7.1		7.6
00301 DO SATUR PERCENT	84.5	84.5	84.5	84.5	84.5	84.5		90.5
00400 PH SU	8.20	8.20	8.20	8.20	8.20	8.20		8.20
32216 CHLRPHYL TOTAL UG/L							20.00	
INITIAL DATE	81/08/11	81/08/11	81/08/11	81/08/11	81/08/11	81/08/11	81/08/11	81/08/11
INITIAL TIME-DEPTH-BOTTOM	1430 0001	1430 0003	1430 0009	1430 0016	1430 0022	1430 0029	1430 0034	1430 0005
FINAL DATE								81/08/11
FINAL TIME-NUMBER OF SAMPLES								1445 6
CP-SPACE OR TIME-STATISTICAL FUNC								CP-S
00010 WATER TEMP CENT	24.8	24.8	23.7	23.5	23.4	23.3	23.3	
00011 WATER TEMP FAHN	76.6	76.6	74.7	74.3	74.1	73.9	73.9	
00094 CNDUCTVY FIELD MICROMHO	811	811	814	814	816	818	817	
00299 DO PROBE MG/L	7.7	7.7	7.9	7.8	7.8	7.7	7.7	
00301 DO SATUR PERCENT	91.7	91.7	92.9	91.8	89.7	88.5	88.5	
00400 PH SU	8.20	8.20	8.20	8.20	8.20	8.20	8.20	
32216 CHLRPHYL TOTAL UG/L								9.00
INITIAL DATE	81/09/01	81/09/01						
INITIAL TIME-DEPTH-BOTTOM	1230 0000	1230 0005						
FINAL DATE		81/09/01						
FINAL TIME-NUMBER OF SAMPLES		1355 6						
CP-SPACE OR TIME-STATISTICAL FUNC		CP-S						
00020 AIR TEMP CENT	24.0							
00061 STREAM FLOW, INST-CFS	39000							
00062 WATER SURF ELE IN FEET	1354.0							
32216 CHLRPHYL TOTAL UG/L		13.00						

BEST DOCUMENT AVAILABLE

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)

	INITIAL DATE			80/10/08	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08	80/10/08
	INITIAL TIME-DEPTH-BOTTOM			1505 0000	1505 0001	1505 0003	1505 0009	1505 0016	1505 0022	1505 0029	1505 0036
00010	WATER	TEMP	CENT	17.0	16.7	16.5	16.0	15.7	15.6	15.5	14.9
00011	WATER	TEMP	FAHN	62.6	62.1	61.7	60.8	60.3	60.1	59.9	58.8
00020	AIR	TEMP	CENT	22.6							
00025	BAROMTRC	PRESSURE	MM OF HG	729							
00032	CLOUD	COVER	PERCENT	0							
00035	WIND	VELOCITY	MPH	1.0							
00036	WIND	DIR.FROM	NORTH-0	315							
00077	TRANSP	SECCHI	INCHES	36							
00094	CNDUCTVY	FIELD	MICROMHO	817	817	817	817	817	818	819	818
00299	DO	PROBE	MG/L	9.0	9.2	9.2	9.1	9.1	9.0	8.9	8.5
00301	DO	SATUR	PERCENT	92.8	94.6	94.8	91.0	91.0	90.0	89.0	83.3
00400	PH		SU	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.20

	INITIAL DATE			80/10/08	80/10/08	80/10/08	81/02/18	81/02/18	81/04/22	81/04/22	81/04/22
	INITIAL TIME-DEPTH-BOTTOM			1505 0042	1505 0049	1530 0005	1120 0000	1120 0005	1345 0000	1345 0001	1345 0003
	FINAL DATE					80/10/08		81/02/18			
	FINAL TIME-NUMBER OF SAMPLES					1550 6		1135 6			
	CP-SPACE OR TIME-STATISTICAL FUNC					CP-S		CP-S			
00010	WATER	TEMP	CENT	14.8	14.8				11.5	11.5	11.5
00011	WATER	TEMP	FAHN	58.6	58.6				52.7	52.7	52.7
00020	AIR	TEMP	CENT						12.8		
00025	BAROMTRC	PRESSURE	MM OF HG						726		
00032	CLOUD	COVER	PERCENT						100		
00035	WIND	VELOCITY	MPH						25.0		
00036	WIND	DIR.FROM	NORTH-0						315		
00076	TURB	TRBIDMTR	HACH FTU			13.0					
00077	TRANSP	SECCHI	INCHES						82		
00094	CNDUCTVY	FIELD	MICROMHO	814	814		577		788	788	788
00299	DO	PROBE	MG/L	8.2	8.0		9.9		10.6	10.6	10.6
00301	DO	SATUR	PERCENT	80.4	78.4				98.1	98.1	98.1
00400	PH		SU	8.20	8.10		8.33		8.40	8.40	8.40
00410	T ALK	CACO3	MG/L			174					
00515	RESIDUE	DISS-105	C MG/L			522					
00530	RESIDUE	TOT NFLT	MG/L			13					
00610	NH3+NH4-	N TOTAL	MG/L			0.010					
00619	UN-IONZD	NH3-NH3	MG/L			0.000					
00620	NO3-N	TOTAL	MG/L			0.000					
00665	PHOS-TOT		MG/L P			0.050					
00900	TOT HARD	CACO3	MG/L			259					
00916	CALCIUM	CA-TOT	MG/L			62.0					
00927	MGNSIUM	MG,TOT	MG/L			25.0					
00940	CHLORIDE	TOTAL	MG/L			10					
00945	SULFATE	SO4-TOT	MG/L			236					
32216	CHLRPHYL	TOTAL	UG/L			4.00		2.00			
60050	ALGAE	TOTAL	/ML			12500					
70507	PHOS-T	ORTHO	MG/L P			0.000					
71000	ABUNDANT	ALGCOUNT	1ST DOM			9300					
71001	ABUNDANT	ALGCOUNT	2ND DOM			1430					
71002	ABUNDANT	ALGCOUNT	3RD DOM			720					
71003	ABUNDANT	ALGCOUNT	4TH DOM			720					
71004	ABUNDANT	ALGCOUNT	5TH DOM			360					
71010	ABUNDANT	ALGGENUS	1ST DOM			69					
71011	ABUNDANT	ALGGENUS	2ND DOM			33					
71012	ABUNDANT	ALGGENUS	3RD DOM			74					
71013	ABUNDANT	ALGGENUS	4TH DOM			71					
71014	ABUNDANT	ALGGENUS	5TH DOM			88					
71900	MERCURY	HG,TOTAL	UG/L			0.2					

	INITIAL DATE			81/04/22	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22
	INITIAL TIME-DEPTH-BOTTOM			1345 0009	1345 0016	1345 0022	1345 0029	1345 0036	1345 0042	1345 0045	1345 0065
	FINAL DATE										81/04/22
	FINAL TIME-NUMBER OF SAMPLES										1410 6
	CP-SPACE OR TIME-STATISTICAL FUNC										CP-S
00010	WATER	TEMP	CENT	11.5	11.5	11.6	11.6	11.6	11.6	11.6	
00011	WATER	TEMP	FAHN	52.7	52.7	52.9	52.9	52.9	52.9	52.9	
00076	TURB	TRBIDMTR	HACH FTU								1.0
00094	CNDUCTVY	FIELD	MICROMHO	788	787	787	787	787	787	787	
00299	DO	PROBE	MG/L	10.6	10.5	10.5	10.5	10.5	10.5	10.5	
00301	DO	SATUR	PERCENT	98.1	97.2	97.2	97.2	97.2	97.2	97.2	
00400	PH		SU	8.40	8.40	8.40	8.40	8.40	8.40	8.40	
00410	T ALK	CACO3	MG/L								177
00515	RESIDUE	DISS-105	C MG/L								528
00530	RESIDUE	TOT NFLT	MG/L								32
00610	NH3+NH4-	N TOTAL	MG/L								0.000
00619	UN-IONZD	NH3-NH3	MG/L								0.000
00620	NO3-N	TOTAL	MG/L								0.020
00665	PHOS-TOT		MG/L P								0.030
00720	CYANIDE	CN-TOT	MG/L								0.000
00900	TOT HARD	CACO3	MG/L								260
00916	CALCIUM	CA-TOT	MG/L								60.0
00927	MGNSIUM	MG,TOT	MG/L								26.0
00929	SODIUM	NA,TOT	MG/L								79.00
00931	SODIUM	ADSBTION	RATIO								2.1
00940	CHLORIDE	TOTAL	MG/L								11
00945	SULFATE	SO4-TOT	MG/L								210
01002	ARSENIC	AS,TOT	UG/L								1
01012	BERYLIUM	BE,TOT	UG/L								0.00
01022	BORON	B,TOT	UG/L								74

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)--Continued

INITIAL DATE	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22	81/04/22
INITIAL TIME-DEPTH-BOTTOM	1345 0009	1345 0016	1345 0022	1345 0029	1345 0036	1345 0042	1345 0045	1345 0005
FINAL DATE								81/04/22
FINAL TIME-NUMBER OF SAMPLES								1410 6
CP-SPACE OR TIME-STATISTICAL FUNC								CP-S
01027 CADMIUM CD,TOT UG/L								1
01034 CHROMIUM CR,TOT UG/L								0
01042 COPPER CU,TOT UG/L								1
01045 IRON FE,TOT UG/L								222
01051 LEAD PB,TOT UG/L								0
01055 MANGNESE MN UG/L								21.0
01067 NICKEL NI,TOTAL UG/L								11
01077 SILVER AG,TOT UG/L								0.0
01092 ZINC ZN,TOT UG/L								13
01105 ALUMINUM AL,TOT UG/L								289
01132 LITHIUM LI,TOT UG/L								40
01147 SELENIUM SE,TOT UG/L								0
32230 CHLRPHYL A MG/L								0.006
39516 PCBS WHL SMPL UG/L								0.000
70507 PHOS-T ORTHO MG/L P								0.000
71900 MERCURY HG,TOTAL UG/L								0.0

INITIAL DATE	81/04/28	81/04/28	81/05/21	81/05/21	81/05/21	81/05/21	81/05/21	81/05/21
INITIAL TIME-DEPTH-BOTTOM	1240 0000	1240 0131	0825 0000	0825 0001	0825 0003	0825 0009	0825 0016	0825 0022
00010 WATER TEMP CENT	4.0	3.8	14.9	14.9	14.9	14.9	15.0	13.7
00011 WATER TEMP FAHN	39.2	38.8	58.8	58.8	58.8	58.8	59.0	56.7
00020 AIR TEMP CENT			15.5					
00025 BAROMTRC PRESSURE MM OF HG			7					
00032 CLOUD COVER PERCENT			100					
00035 WIND VELOCITY MPH			5.0					
00036 WIND DIR.FROM NORTH=0			180					
00077 TRANSP SECCHI INCHES			41					
00094 CNDUCTVY FIELD MICROMHO	610	685	803	803	803	803	802	802
00299 DO PROBE MG/L	9.5	9.6	9.4	9.4	9.4	9.4	9.3	9.2
00301 DO SATUR PERCENT	72.5	73.3	92.2	92.2	92.2	92.2	91.2	88.5
00400 PH SU	8.30	8.30	8.30	8.30	8.30	8.30	8.30	8.20

INITIAL DATE	81/05/21	81/05/21	81/05/21	81/05/21	81/05/21	81/06/02	81/06/02	81/06/02
INITIAL TIME-DEPTH-BOTTOM	0825 0029	0825 0036	0825 0042	0825 0045	0850 0005	1210 0000	1210 0001	1210 0003
FINAL DATE					81/05/21			
FINAL TIME-NUMBER OF SAMPLES					0905 6			
CP-SPACE OR TIME-STATISTICAL FUNC					CP-S			
00010 WATER TEMP CENT	13.6	13.6	13.3	12.8		9.1	9.1	9.1
00011 WATER TEMP FAHN	56.5	56.5	55.9	55.0		48.4	48.4	48.4
00020 AIR TEMP CENT						14.0		
00025 BAROMTRC PRESSURE MM OF HG						755		
00032 CLOUD COVER PERCENT						5		
00035 WIND VELOCITY MPH						10.0		
00036 WIND DIR.FROM NORTH=0						0		
00062 WATER SURF ELE IN FEET						1830.6		
00076 TURB TRBIDMTR HACH FTU					1.0			
00077 TRANSP SECCHI INCHES						131		
00094 CNDUCTVY FIELD MICROMHO	802	803	804	806		708	709	710
00299 DO PROBE MG/L	9.2	9.1	8.6	8.0		11.5	11.1	10.6
00301 DO SATUR PERCENT	88.5	87.5	81.1	75.5		99.1	95.7	91.4
00400 PH SU	8.30	8.30	8.20	8.10		8.50	8.50	8.50
00410 T ALK CACO3 MG/L					172			
00515 RESIDUE DISS-105 C MG/L					526			
00530 RESIDUE TOT NFLT MG/L					12			
00610 NH3+NH4- N TOTAL MG/L					0.010			
00619 UN-IONZD NH3-NH3 MG/L					0.000			
00620 NO3-N TOTAL MG/L					0.000			
00665 PHOS-TOT MG/L P					0.040			
00900 TOT HARD CACO3 MG/L					254			
00916 CALCIUM CA-TOT MG/L					62.0			
00927 MGNSIUM MG,TOT MG/L					24.0			
00940 CHLORIDE TOTAL MG/L					10			
00945 SULFATE SO4-TOT MG/L					220			
32216 CHLRPHYL TOTAL UG/L					47.00			
70507 PHOS-T ORTHO MG/L P					0.000			
71900 MERCURY HG,TOTAL UG/L					0.7			

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)--Continued

INITIAL DATE	81/06/02	81/06/02	81/06/02	81/06/02	81/06/02	81/06/02	81/06/02	81/06/17
INITIAL TIME-DEPTH-BOTTOM	1210 0006	1210 0016	1210 0032	1210 0065	1210 0098	1210 0131	1210 0150	1400 0000
00010 WATER TEMP CENT	9.0	8.9	8.6	8.4	8.0	7.8	7.7	20.3
00011 WATER TEMP FAHN	48.2	48.0	47.5	47.1	46.4	46.0	45.9	68.5
00020 AIR TEMP CENT								27.0
00025 BAROMTRC PRESSURE MM OF HG								728
00032 CLOUD COVER PERCENT								50
00035 WIND VELOCITY MPH								8.0
00036 WIND DIR.FROM NORTH-0								315
00077 TRANSP SECCHI INCHES								24
00094 CNDUCTVY FIELD MICROMHO	713	714	718	723	724	726	728	807
00299 DO PROBE MG/L	10.7	10.9	11.1	11.5	11.6	11.6	11.5	7.7
00301 DO SATUR PERCENT	92.2	94.0	95.7	96.6	97.5	97.5	96.6	83.7
00400 PH SU	8.50	8.50	8.50	8.50	8.50	8.50	8.50	8.30

INITIAL DATE	81/06/17	81/06/17	81/06/17	81/06/17	81/06/17	81/06/17	81/06/17	81/06/17
INITIAL TIME-DEPTH-BOTTOM	1400 0001	1400 0003	1400 0009	1400 0016	1400 0022	1400 0029	1400 0036	1400 0042
00010 WATER TEMP CENT	20.2	20.2	20.2	20.1	20.1	20.1	20.1	19.9
00011 WATER TEMP FAHN	68.4	68.4	68.4	68.2	68.2	68.2	68.2	67.8
00094 CNDUCTVY FIELD MICROMHO	807	807	807	807	807	807	806	806
00299 DO PROBE MG/L	7.7	7.7	7.7	7.7	7.6	7.6	7.6	7.6
00301 DO SATUR PERCENT	83.7	83.7	83.7	83.7	82.6	82.6	82.6	82.6
00400 PH SU	8.30	8.30	8.20	8.20	8.30	8.20	8.20	8.20

INITIAL DATE	81/06/17	81/06/17	81/06/17	81/07/09	81/07/09	81/07/09	81/07/09	81/07/09
INITIAL TIME-DEPTH-BOTTOM	1400 0047	1420 0005	1425 0005	1128 0000	1128 0001	1330 0000	1330 0003	1330 0009
FINAL DATE		81/06/17	81/06/17					
FINAL TIME-NUMBER OF SAMPLES		1425 6	1440 6					
CP-SPACE OR TIME-STATISTICAL FUNC		CP-S	CP-S					
00010 WATER TEMP CENT	19.8			18.8	18.8	24.0	24.0	23.0
00011 WATER TEMP FAHN	67.6			65.8	65.8	75.2	75.2	73.4
00020 AIR TEMP CENT						30.0		
00032 CLOUD COVER PERCENT						0		
00035 WIND VELOCITY MPH						9.0		
00036 WIND DIR.FROM NORTH-0						60		
00062 WATER SURF ELE IN FEET						1206.9		
00076 TURB TRBIDMTR HACH FTU		16.0						
00094 CNDUCTVY FIELD MICROMHO	806			747	748			
00299 DO PROBE MG/L	7.5			9.4	9.4			
00301 DO SATUR PERCENT	81.5			100.0	100.0			
00400 PH SU	8.20			8.50	8.50			
00410 T ALK CACO3 MG/L		174						
00515 RESIDUE DISS-105 C MG/L		594						
00530 RESIDUE TOT NFLT MG/L		26						
00610 NH3+NH4- N TOTAL MG/L		0.010						
00619 UN-IONZD NH3-NH3 MG/L		0.000						
00620 NO3-N TOTAL MG/L		0.000						
00665 PHOS-TOT MG/L P		0.040						
00900 TOT HARD CACO3 MG/L		277						
00916 CALCIUM CA-TOT MG/L		61.0						
00927 MGNSIUM MG,TOT MG/L		31.0						
00940 CHLORIDE TOTAL MG/L		11						
00945 SULFATE SO4-TOT MG/L		250						
32216 CHLRPHYL TOTAL UG/L			45.00					
70507 PHOS-T ORTHO MG/L P		0.000						
71900 MERCURY HG,TOTAL UG/L		0.5						

INITIAL DATE	81/07/09	81/07/09	81/07/09	81/07/09	81/07/09	81/07/09	81/07/09	81/07/15
INITIAL TIME-DEPTH-BOTTOM	1330 0016	1330 0022	1330 0026	1330 0029	1330 0036	1330 0042	1330 0005	1400 0000
FINAL DATE							81/07/09	
FINAL TIME-NUMBER OF SAMPLES							1345 6	
CP-SPACE OR TIME-STATISTICAL FUNC							CP-S	
00010 WATER TEMP CENT	23.0	23.0	21.0	22.0	22.0	22.0		26.2
00011 WATER TEMP FAHN	73.4	73.4	69.8	71.6	71.6	71.6		79.2
00020 AIR TEMP CENT								29.0
00025 BAROMTRC PRESSURE MM OF HG								732
00032 CLOUD COVER PERCENT								90
00035 WIND VELOCITY MPH								5.0
00036 WIND DIR.FROM NORTH-0								315
00076 TURB TRBIDMTR HACH FTU							2.0	
00077 TRANSP SECCHI INCHES								60
00094 CNDUCTVY FIELD MICROMHO								818
00299 DO PROBE MG/L								7.0
00301 DO SATUR PERCENT								85.4
00400 PH SU								8.20
00410 T ALK CACO3 MG/L							174	
00515 RESIDUE DISS-105 C MG/L							600	
00530 RESIDUE TOT NFLT MG/L							8	
00610 NH3+NH4- N TOTAL MG/L							0.080	
00619 UN-IONZD NH3-NH3 MG/L							0.010	
00620 NO3-N TOTAL MG/L							0.010	
00665 PHOS-TOT MG/L P							0.030	
00900 TOT HARD CACO3 MG/L							278	
00940 CHLORIDE TOTAL MG/L							11	
00945 SULFATE SO4-TOT MG/L							240	
32216 CHLRPHYL TOTAL UG/L							2.00	
70507 PHOS-T ORTHO MG/L P							0.000	

MISSOURI RIVER MAIN STEM

LEWIS AND CLARK LAKE NEAR DAM, SD (LAT 42 52 00 LONG 97 29 30)--Continued

INITIAL DATE	81/07/15	81/07/15	81/07/15	81/07/15	81/07/15	81/07/15	81/07/15	81/07/15
INITIAL TIME-DEPTH-BOTTOM	1400 0001	1400 0003	1400 0009	1400 0016	1400 0022	1400 0029	1400 0036	1400 0042
00010 WATER TEMP CENT	26.2	26.2	25.8	25.6	24.7	24.4	23.1	22.1
00011 WATER TEMP FAHN	79.2	79.2	78.4	78.1	76.5	75.9	73.6	71.8
00094 CNDUCTVY FIELD MICROMHO	817	816	818	821	820	822	810	814
00299 DO PROBE MG/L	6.9	6.9	6.7	6.4	5.7	5.5	4.3	2.0
00301 DO SATUR PERCENT	84.1	84.1	81.7	78.0	67.9	64.7	49.4	22.7
00400 PH SU	8.20	8.20	8.20	8.20	8.10	8.00	7.80	7.50

INITIAL DATE	81/07/15	81/07/15	81/08/04	81/08/12	81/08/12	81/08/12	81/08/12	81/08/12
INITIAL TIME-DEPTH-BOTTOM	1400 0046	1400 0005	1515 0000	1320 0000	1320 0001	1320 0003	1320 0009	1320 0016
FINAL DATE		81/07/15						
FINAL TIME-NUMBER OF SAMPLES		1420 6						
CP-SPACE OR TIME-STATISTICAL FUNC		CP-S						
00010 WATER TEMP CENT	21.8			25.6	25.1	24.7	24.2	24.1
00011 WATER TEMP FAHN	71.2			78.1	77.2	76.5	75.6	75.4
00020 AIR TEMP CENT				34.5				
00025 BAROMTRC PRESSURE MM OF HG				735				
00032 CLOUD COVER PERCENT				5				
00035 WIND VELOCITY MPH			4.0	2.0				
00036 WIND DIR.FROM NORTH=0				225				
00077 TRANSP SECCHI INCHES				36				
00094 CNDUCTVY FIELD MICROMHO	814			817	817	817	817	822
00299 DO PROBE MG/L	1.6			7.6	7.7	7.7	7.5	7.3
00301 DO SATUR PERCENT	18.2			92.7	91.7	91.7	88.2	85.9
00400 PH SU	7.40			8.10	8.10	8.10	8.10	8.10
32216 CHLRPHYL TOTAL UG/L		4.00						

INITIAL DATE	81/08/12	81/08/12	81/08/12	81/08/12	81/08/12	81/08/12
INITIAL TIME-DEPTH-BOTTOM	1320 0022	1320 0029	1320 0036	1320 0042	1320 0047	1320 0005
FINAL DATE						81/08/12
FINAL TIME-NUMBER OF SAMPLES						1340 6
CP-SPACE OR TIME-STATISTICAL FUNC						CP-S
00010 WATER TEMP CENT	23.8	23.7	23.6	22.7	20.7	
00011 WATER TEMP FAHN	74.8	74.7	74.5	72.9	69.3	
00094 CNDUCTVY FIELD MICROMHO	824	826	826	830	830	
00299 DO PROBE MG/L	6.8	6.6	6.4	4.6	2.3	
00301 DO SATUR PERCENT	80.0	77.6	75.3	52.9	25.6	
00400 PH SU	8.10	8.00	8.00	7.80	7.40	
32216 CHLRPHYL TOTAL UG/L						4.00

BEST DOCUMENT AVAILABLE

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW GAVINS PT DAM, SD (LAT 42 50 57 LONG 97 27 59)

	INITIAL DATE			80/10/20	80/11/19	80/11/19	80/12/17	81/01/27	81/02/25	81/02/25	81/03/24
	INITIAL TIME-DEPTH-BOTTOM			1745 0000	1600 0000	1650	1615 0000	1630 0000	1555 0000	1600	1525 0000
00010	WATER	TEMP	CENT	10.5	6.5		2.0	2.0	8.5		6.0
00011	WATER	TEMP	FAHN	50.9	43.7		35.6	35.6	47.3		42.8
00020	AIR	TEMP	CENT	19.5	7.0		9.5	2.0	11.5		16.5
00025	BAROMTRC	PRESSURE	MM OF HG	733	737			7	735		735
00032	CLOUD	COVER	PERCENT	0	5		20	30	5		80
00035	WIND	VELOCITY	MPH	5.0	5.0		7.0	20.0	20.0		5.0
00036	WIND	DIR,FROM	NORTH=0	225	225		285	315	135		180
00061	STREAM	FLOW,	INST-CFS	400	37300		700	100	14000		35000
00062	WATER	SURF ELE	IN FEET	1208.2	1208.0		1208.4	1208.9	1206.4		1205.9
00065	STREAM	STAGE	FEET	1160.98	1161.39			14.93	1156.90		1160.00
00076	TURB	TRBIDMTR	HACH FTU	13.0		3.0	4.0	2.0		4.0	
00094	CNDUCTVY	FIELD	MICROMHO	860	450		780	890	690		800
00299	DO	PROBE	MG/L	11.3	10.4		12.2	16.0	13.2		13.7
00301	DO	SATUR	PERCENT	101.8	85.2		88.4	115.9	113.8		109.6
00400	PH		SU	8.40	7.50		8.10		8.20		8.00
00410	T ALK	CACO3	MG/L	169		188	176	174		171	
00515	RESIDUE	DISS-105	C MG/L	586		552	546	608		496	
00530	RESIDUE	TOT NFLT	MG/L	15		2	4	7		6	
00551	HYDROCAR	BUNS-IR	MG/L					1.000			
00610	NH3+NH4-	N TOTAL	MG/L	0.010		0.000	0.000	0.000		0.000	
00619	UN-IONZD	NH3-NH3	MG/L	0.000			0.000	0.000		0.000	
00620	NO3-N	TOTAL	MG/L	0.010		0.010	0.070	0.030		0.020	
00625	TOT KJEL	N	MG/L	0.020		0.200	0.100			0.300	
00665	PHOS-TOT		MG/L P	0.010		0.020	0.020	0.010		0.000	
00720	CYANIDE	CN-TOT	MG/L					0.000			
00900	TOT HARD	CACO3	MG/L	260		265	275	259		261	
00916	CALCIUM	CA-TOT	MG/L	63.0		64.0	65.0	51.0		60.0	
00927	MGNSIUM	MG,TOT	MG/L	25.0		25.0	27.0	32.0		27.0	
00929	SODIUM	NA,TOT	MG/L					73.00			
00940	CHLORIDE	TOTAL	MG/L	10		10	10	9		11	
00945	SULFATE	SO4-TOT	MG/L	280		230	224	197		232	
01002	ARSENIC	AS,TOT	UG/L					2			
01005	BARIUM	BA,DISS	UG/L					22			
01012	BERYLIUM	BE,TOT	UG/L					0.00		0.00	
01022	BORON	B,TOT	UG/L					390			
01027	CADMIUM	CD,TOT	UG/L					3		0	
01034	CHROMIUM	CR,TOT	UG/L					0		0	
01042	COPPER	CU,TOT	UG/L					0		1	
01045	IRON	FE,TOT	UG/L					107		178	
01051	LEAD	PB,TOT	UG/L					0		5	
01055	MANGNESE	MN	UG/L					16.0		17.0	
01067	NICKEL	NI,TOTAL	UG/L					21		7	
01077	SILVER	AG,TOT	UG/L					0.0		1.0	
01092	ZINC	ZN,TOT	UG/L					13		5	
01105	ALUMINUM	AL,TOT	UG/L					118		179	
01132	LITHIUM	LI,TOT	UG/L					38		42	
01147	SELENIUM	SE,TOT	UG/L					1			
31616	FEC COLI	MFM-FCBR	/100ML		9						
39516	PCBS	WHL SMPL	UG/L					0.000			
70507	PHOS-T	ORTHO	MG/L P	0.000		0.000	0.000	0.000		0.000	
71900	MERCURY	HG,TOTAL	UG/L	0.0		0.0	0.0	0.0		0.0	

MISCELLANEOUS WATER QUALITY DATA

MISSOURI RIVER MAIN STEM

POWERHOUSE OUTFLOW GAVINS PT DAM, SD (LAT 42 50 57 LONG 97 27 59)--Continued

INITIAL DATE				81/03/24	81/04/28	81/05/21	81/05/21	81/06/16	81/07/28	81/08/25	81/09/29
INITIAL TIME-DEPTH-BOTTOM				1530	0825	1255 0000	1300	1520 0000	1600 0000	1345 0000	1455 0000
00010	WATER	TEMP	CENT			14.0		21.5	22.0	23.0	19.0
00011	WATER	TEMP	FAHN			57.2		70.7	71.6	73.4	66.2
00020	AIR	TEMP	CENT			26.5		23.5	20.5	27.5	22.5
00025	BAROMTRC	PRESSURE	MM OF HG			729		736		735	726
00032	CLOUD	COVER	PERCENT			90		0	100	20	50
00035	WIND	VELOCITY	MPH			25.0		10.0	5.0		15.0
00036	WIND	DIR.FROM	NORTH-0			135		315	225		315
00061	STREAM	FLOW,	INST-CFS			600		26000	300	500	500
00062	WATER	SURF ELE	IN FEET			1205.6		1206.8	1208.2	1208.1	1208.1
00065	STREAM	STAGE	FEET			1160.18		1159.89	1160.34	1160.55	1160.70
00076	TURB	TRBIDMTR	HACH FTU	6.0	1.0		8.0	14.0			
00094	CNDUCTVY	FIELD	MICROMHO			870		690	700	870	850
00299	DO	PROBE	MG/L			10.4		8.6	8.1	8.7	11.5
00301	DO	SATUR	PERCENT			100.0		97.7	92.0	100.0	122.3
00400	PH		SU			7.60		8.40	8.20	8.10	8.50
00410	T ALK	CACO3	MG/L	179	176		170	171			
00515	RESIDUE	DISS-105	C MG/L	550	504		536	568			
00530	RESIDUE	TOT NFLT	MG/L	26	9		12	21			
00610	NH3+NH4-	N TOTAL	MG/L	0.000	0.000		0.000	0.000			
00619	UN-IONZD	NH3-NH3	MG/L	0.000	0.000		0.000	0.000			
00620	NO3-N	TOTAL	MG/L	0.030	0.000		0.000	0.000			
00625	TOT KJEL	N	MG/L	0.700			0.500	0.300			
00665	PHOS-TOT		MG/L P	0.030	0.070		0.010	0.030			
00900	TOT HARD	CACO3	MG/L	253	262		251	275			
00916	CALCIUM	CA-TOT	MG/L	62.0	60.0		63.0	58.0			
00927	MGNSIUM	MG,TOT	MG/L	24.0	27.0		23.0	31.0			
00929	SODIUM	NA,TOT	MG/L					87.00			
00940	CHLORIDE	TOTAL	MG/L	11	11		9	11			
00945	SULFATE	SO4-TOT	MG/L	202	244		243	253			
01012	BERYLIUM	BE,TOT	UG/L	0.00							
01022	BORON	B,TOT	UG/L					180			
01027	CADMIUM	CD,TOT	UG/L	0							
01034	CHROMIUM	CR,TOT	UG/L	0							
01042	COPPER	CU,TOT	UG/L	3							
01045	IRON	FE,TOT	UG/L	277							
01051	LEAD	PB,TOT	UG/L	5							
01055	MANGNESE	MN	UG/L	26.0							
01067	NICKEL	NI,TOTAL	UG/L	7							
01077	SILVER	AG,TOT	UG/L	1.0							
01092	ZINC	ZN,TOT	UG/L	6							
01105	ALUMINUM	AL,TOT	UG/L	331							
01132	LITHIUM	LI,TOT	UG/L	45							
31616	FEC COLI	MFM-FCBR	/100ML			0		25		3	23
70507	PHOS-T	ORTHO	MG/L P		0.000		0.000	0.000			
71900	MERCURY	HG,TOTAL	UG/L	0.0	0.0		0.0	0.0			

BEST DOCUMENT AVAILABLE

The ground-water observation wells network in South Dakota is used to monitor quantitative and at times qualitative changes in the glacial and bedrock aquifers. Federal, state, and local agencies monitor approximately 2,000 wells throughout the state. The seven wells included in this report are a sample of the South Dakota observation well network. All measurements are in feet above or below land-surface datum. Well 110N62W9BCCC and well 124N63W15CBBB tap glacial aquifers and are monitored with digital recorders. The other five wells are bedrock wells. Of these, wells 8S2E20DACC and 3N24E25BCC are measured annually with a steel tape, well 7N2E10BAD is monitored by a pressure recorder, and wells 98N50W32AAAA2 and 127N58W23DAD are monitored with digital recorders.

AURORA COUNTY

435039098263403.
LOCATION.--Lat 43°50'39", long 98°26'34", in SW¼SW¼SW¼NW¼ sec.6, T.104 N., R.63 W., Hydrologic Unit 10160011, 8.5 mi (13.8 km) north-northeast of Plankinton.
Owner: South Dakota Department of Water and Natural Resources.
AQUIFER.--Niobrara.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 6 in (0.15 m), depth 134 ft (40.8 m), perforated 114 to 134 ft (34.7 to 40.8 m).
DATUM.--Land-surface datum is 1,418 ft (432.2 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 2.0 ft (0.61 m) above land-surface datum.
PERIOD OF RECORD.--April 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 56.98 ft (17.098 m) below land-surface datum, Apr. 4, 1979, lowest, 96.44 ft (29.395 m) below land-surface datum, July 25, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

OCT 07, 1980 59.67; OCT 28, 1980 59.46; DEC 10, 1980 58.73; SEP 03, 1981 61.06.

BEADLE COUNTY

442112098174001.
LOCATION.--Lat 44°21'12", long 98°17'40", in SW¼SW¼SW¼NW¼ sec.9, T.110 N., R.62 W., Hydrologic Unit 10160006, at southwest corner of city well field, 3.5 mi (5.6 km) west of Huron.
Owner: City of Huron.
AQUIFER.--Glacial Outwash.
WELL CHARACTERISTICS.--Drilled unused public supply artesian well, diameter 12 in (0.305 m), depth 74 ft (22.6 m), perforated 38 to 74 ft (11.6 to 22.6 m).
DATUM.--Land-surface datum is 1,306.93 ft (398.352 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of platform 2.00 ft (0.610 m) above land-surface datum.
PERIOD OF RECORD.--February 1954 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 10.81 ft (3.295 m) below land-surface datum, Feb. 5, 1954, lowest, 45.10 ft (13.746 m) below land-surface datum, Aug. 15, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

APR 22, 1981 35.93; MAY 01, 1981 36.70; JUN 17, 1981 41.56; JUL 01, 1981 43.67;

SEP 30, 1981 40.72.

BROWN COUNTY

453312098244401.
LOCATION.--Lat 45°33'12", long 98°24'44", in NW¼NW¼NW¼SW¼ sec.15, T.124 N., R.63 W., Hydrologic Unit 10160004, 1.5 mi (2.4 km) south of Ordway.
Owner: Bureau of Reclamation.
AQUIFER.--Elm.
WELL CHARACTERISTICS.--Drilled observation water-table well, diameter 4 in (0.10 m), depth 38 ft (11.6 m), perforated 6 to 38 ft (1.8 to 11.6 m).
DATUM.--Land-surface datum is 1,304.14 ft (397.502 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 3.10 ft (0.945 m) above land-surface datum.
PERIOD OF RECORD.--August 1955 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 0.35 ft (0.107 m) below land-surface datum, Apr. 15, 1969, lowest, 10.87 ft (3.313 m) below land-surface datum, Mar. 15, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	9.08	---	8.86	8.74	8.86	8.74	8.79	8.89	8.91	9.27	---	9.54
10	---	---	8.94	8.78	8.88	8.73	8.68	8.89	9.00	9.34	---	9.56
15	---	---	8.88	8.75	---	8.71	8.71	8.87	9.05	9.36	---	9.62
20	---	8.78	8.90	8.75	---	8.73	8.74	8.89	9.06	9.32	9.46	9.65
25	---	8.81	8.77	8.75	---	8.84	8.76	8.94	9.09	9.27	9.49	9.69
EOM	---	8.80	8.75	8.85	---	8.90	8.85	8.89	9.16	9.20	9.49	9.71
MAX	9.13	8.81	8.94	8.86	8.89	8.90	8.90	8.94	9.18	9.37	9.49	9.71
MIN	9.06	8.75	8.74	8.74	8.86	8.70	8.68	8.68	8.87	9.20	9.19	9.50

WTR YR 1981 HIGH 8.73 JAN 6 AND OTHERS LOW 9.71 SEP 28 AND OTHERS

NOTE: Instantaneous observations at 1200 Oct. 1 through Dec. 31. Maximum depth below land surface Jan. 1 through Sept. 30.

FALL RIVER COUNTY

432015103535801.
LOCATION.--Lat 43°20'15", long 103°53'58", in SW¼SW¼NE¼SE¼ sec.20, T.8 S., R.2 E., Hydrologic Unit 10120106, 5 mi (8 km) northwest of Edgemont.
Owner: D. Heldman.
AQUIFER.--Lakota.
WELL CHARACTERISTICS.--Drilled artesian stock well, diameter 5 in (0.13 m), depth 410 ft (124.9 m).
DATUM.--Land-surface datum is 3,532 ft (1,076.6 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 0.60 ft (0.183 m) above land-surface datum.
PERIOD OF RECORD.--September 1956 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 23.29 ft (7.099 m) below land-surface datum, Mar. 1, 1957, lowest, 38.62 ft (11.771 m) below land-surface datum, June 16, 1964.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

MAY 11, 1981 37.01.

HAAKON COUNTY

441055101121001
LOCATION.--Lat 44°10'55", long 101°12'10", in SW¼SW¼NW¼ sec.35, T.3 N., R.24 E., Hydrologic Unit 10140102, 9.5 mi (15.3 km) north-northeast of Midland.
Owner: William Blucher.
AQUIFER.--Dakota.
WELL CHARACTERISTICS.--Drilled artesian stock well, diameter 3 in (0.08 m), depth 2,054 ft (626.1 m).
DATUM.--Land-surface datum is 2,150 ft (655.3 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of casing 2.5 ft (0.76 m) above land-surface datum.
PERIOD OF RECORD.--August 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 149.50 ft (45.568 m) below land-surface datum, Aug. 28, 1963, lowest, 191.18 ft (58.271 m) below land-surface datum, May 20, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

MAY 20, 1981 191.18.

LAWRENCE COUNTY

443515103513901.
LOCATION.--Lat 44°35'15", long 103°51'39", in SE¼NE¼NW¼ sec.10, T.7 N., R.2 E., Hydrologic Unit 10120203, 4.5 mi (7.2 km) north of Spearfish.
Owner: South Dakota Department of Water and Natural Resources.
AQUIFER.--Minnelusa.
WELL CHARACTERISTICS.--Drilled artesian observation well, diameter 5 in (0.13 m), depth 1,306 ft (398.1 m), perforated 1,226 to 1,306 ft (385.9 to 398.1 m).
DATUM.--Land-surface datum is 3,205 ft (976.9 m) National Geodetic Vertical Datum of 1929. Measuring point: Base of gage 2.5 ft (0.76 m) above land-surface datum.
PERIOD OF RECORD.--April 1963 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 302.80 ft (92.293 m) above land-surface datum, Apr. 30, 1977, lowest, 258.40 ft (78.760 m) above land-surface datum, Aug. 10, 1977.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05, 1980	272.50	JAN 05, 1981	274.70	APR 05, 1981	279.30	JUL 05, 1981	272.40
10	268.60	10	275.90	10	279.30	10	270.10
15	266.50	15	274.70	15	279.30	15	271.30
20	274.50	20	276.20	20	279.90	20	266.10
25	276.30	25	279.30	25	274.70	25	270.10
31	278.00	31	279.30	30	271.30	31	273.60
NOV 05	279.10	FEB 05	279.30	MAY 05	270.10	AUG 05	273.60
10	280.30	10	279.30	10	270.10	10	262.00
15	275.70	15	279.90	15	269.00	15	263.20
20	274.00	20	280.50	20	270.10	20	261.50
25	272.80	25	279.30	25	269.00	25	258.00
30	271.10	26	280.50	31	270.10	31	258.00
DEC 05	272.20	MAR 05	279.30	JUN 05	270.10	SEP 05	260.30
10	272.20	10	279.30	10	270.10	10	260.30
15	274.00	15	279.90	15	273.60	15	260.90
20	272.20	20	279.90	20	279.30	20	260.90
25	272.20	25	279.30	25	275.90	25	260.90
31	274.50	31	279.30	30	274.70	30	260.90

NOTE: Instantaneous observations at 1200 Oct. 1 through Dec. 31. Maximum height above land surface Jan. 1 through Sept. 30.

LINCOLN COUNTY

431619096460202.
LOCATION.--Lat 43°16'19", long 96°46'02", in NE¼NE¼NE¼NE¼ sec.32, T.98 N., R.50 W., Hydrologic Unit 10170102, 4 mi (6 km) south of Worthing.
Owner: South Dakota Department of Water and Natural Resources.
WELL CHARACTERISTICS.--Drilled observation artesian well, diameter 6 in (0.15 m), depth 383 ft (116.7 m), screened 363 to 383 ft (110.6 to 116.7 m).
DATUM.--Land-surface datum is 1,320 ft (402.3 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 3.0 ft (0.91 m) above land-surface datum.
PERIOD OF RECORD.--August 1979 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 150.70 ft (45.933 m) below land-surface datum, Oct. 31, 1979, lowest, 151.95 ft (46.314 m) below land-surface datum, Nov. 25, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05, 1980	151.65	NOV 05, 1980	151.80	DEC 05, 1980	151.80	JUN 30, 1981	152.42
06	151.77	10	151.90	10	151.85	JUL 26	152.51
10	151.75	15	151.90	FEB 18, 1981	151.93	AUG 27	152.58
15	151.70	20	151.85	MAR 22	152.12	SEP 17	152.60
25	151.80	25	151.95	APR 14	152.40		
31	151.75	30	151.70	MAY 01	152.26		

NOTE: Instantaneous observations at 1200 Oct. 1 through Dec. 31. Maximum depth below land surface Jan. 1 through Sept. 30.

MARSHALL COUNTY

454745097450401.
LOCATION.--Lat 45°47'45", long 97°45'04", in SE¼NE¼SE¼ sec.23, T.127 N., R.58 W., Hydrologic Unit 09020105, within city limits of Britton.
Owner: City of Britton.
AQUIFER.--Dakota Sandstone.
WELL CHARACTERISTICS.--Drilled unused public supply artesian well, diameter 8 in (0.20 m), depth 1,060 ft (323.1 m).
DATUM.--Land-surface datum is 1,360 ft (414.5 m) National Geodetic Vertical Datum of 1929. Measuring point: Top of recorder platform 2.50 ft (0.760 m) above land-surface datum.
PERIOD OF RECORD.--July 1970 to current year.
EXTREMES FOR PERIOD OF RECORD.--Highest water level, 37.18 ft (11.306 m) below land-surface datum, lowest, 59.92 ft (18.221 m) below land-surface datum.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 08, 1980	43.39	FEB 02, 1981	43.50	MAY 17, 1981	44.47	AUG 26, 1981	44.44
NOV 21	43.22	APR 01	43.48	JUN 03	43.87	SEP 24	44.12
JAN 11, 1981	43.69	30	43.67	JUL 12	44.08		

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	GEO-LOGIC UNIT	SAMP-LING DEPTH (FT) (00003)	SPE-CIFIC CON-DUCT-ANCE (UMHOS) (00095)	PH (UNITS) (00400)	TEMPER-ATURE (DEG C) (00010)	HARD-NESS (MG/L AS CACO3) (00900)
				BUTTE					
443839103514701	8N 2E22ABDC	80-10-22	--	300PLZC	--	1238	6.0	24.2	690
443716103522501	8N 2E28DDDB	80-10-22	--	331MDSN	--	458	6.7	21.8	230
				LINCOLN					
431529096460401	98N50W32DDDD	81-05-14	1100	--	650	--	7.6	--	--
				MINNEHAHA					
434508096372701	103N48W 5CACA	81-05-05	1400	400SOUX	--	958	7.2	10.0	450
434414096380301	103N48W 7DAC	81-05-06	1335	112PLSC	--	1220	7.5	8.5	610
434432096364201	103N48W 6ADA	80-10-01	1630	112PLSC	--	1260	6.8	11.0	650
		81-05-06	1045	112PLSC	--	1265	7.2	9.0	690
434429096361801	103N48W 9BDCB	80-10-01	1730	400SOUX	--	800	7.1	8.5	390
434400096362201	103N48W 9CCDA	80-10-01	0700	400SOUX	--	2610	6.7	8.5	1300
		81-05-06	0800	400SOUX	--	1780	7.6	9.5	1000
434332096371501	103N48W17ACCC	80-10-02	0800	400SOUX	--	681	7.2	8.0	470
		81-05-06	1500	400SOUX	--	1035	7.2	10.5	530
434339096381101	103N48W18ACA	81-05-06	1620	400SOUX	--	2035	7.5	10.0	1100
				PENNINGTON					
435959103181301	1N 7E32CADB	80-10-21	--	360DDWD	--	378	7.3	17.7	170

STATION NUMBER	DATE OF SAMPLE	HARD-NESS, NONCAR-BONATE (MG/L CACO3) (00902)	CALCIUM DIS-SOLVED (MG/L AS CA) (00915)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG) (00925)	SODIUM, DIS-SOLVED (MG/L AS NA) (00930)	PERCENT SODIUM (00932)	SODIUM AD-SORP-TION RATIO (00931)	POTAS-SIUM, DIS-SOLVED (MG/L AS K) (00935)	BICAR-BONATE FET-FLD (MG/L AS HCO3) (00440)	ALKA-LINITY FIELD (MG/L AS CACO3) (00410)	SULFATE DIS-SOLVED (MG/L AS SO4) (00945)
					BUTTE						
443839103514701	80-10-22	460	210	39	5.0	2	.1	2.2	264	217	490
443716103522501	80-10-22	0	58	23	1.8	2	.1	1.1	288	236	8.3
					LINCOLN						
431529096460401	81-05-14	--	--	--	--	--	--	--	--	--	--
					MINNEHAHA						
434508096372701	81-05-05	--	130	30	17	8	.4	3.5	--	--	--
434414096380301	81-05-06	--	110	81	30	10	.5	2.2	--	--	360
434432096364201	80-10-01	36	150	66	17	5	.3	16	--	610	45
	81-05-06	--	160	71	18	5	.3	12	--	--	--
434429096361801	80-10-01	70	100	34	21	10	.5	3.4	--	320	110
434400096362201	80-10-01	900	250	160	55	8	.7	8.5	--	380	170
	81-05-06	--	210	120	86	9	.6	8.1	--	--	--
434332096371501	80-10-02	150	140	28	18	8	.4	3.9	--	320	220
	81-05-06	--	160	32	19	7	.4	3.8	--	--	--
434339096381101	81-05-06	--	300	93	35	6	.5	5.4	--	--	--
					PENNINGTON						
435959103181301	80-10-21	0	38	18	10	11	.3	2.9	204	167	33

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	SULFIDE TOTAL (MG/L AS S) (00745)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL) (00940)	FLUO-RIDE, DIS-SOLVED (MG/L AS F) (00950)	SILICA, DIS-SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L) (70301)	SOLIDS, DIS-SOLVED (TONS PER AC-FT) (70303)	NITRO-GEN, TOTAL (MG/L AS N) (00600)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N) (00605)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N) (00608)
BUTTE											
443839103514701	80-10-22	.0	.6	.5	11	936	886	1.2	.23	.11	.020
443716103522501	80-10-22	.0	1.3	.8	11	228	240	.31	.27	.10	.000
LINCOLN											
431529096460401	81-05-14	--	--	--	--	--	--	--	--	--	--
MINNEHAHA											
434508096372701	81-05-05	--	--	--	25	--	193	--	--	--	--
434414096380301	81-05-06	--	100	--	20	--	1010	--	--	--	--
434432096364201	80-10-01	--	55	.6	27	--	784	1.0	2.6	2.1	--
	81-05-06	--	--	--	24	--	390	--	--	--	--
434429096361801	80-10-01	--	3.9	.8	26	--	504	.69	4.1	1.3	--
434400096362201	80-10-01	--	200	.6	24	--	1890	2.5	26	9.6	--
	81-05-06	--	--	--	25	--	262	--	--	--	--
434332096371501	80-10-02	--	1.0	.8	24	--	629	.86	.62	.62	--
	81-05-06	--	--	--	24	--	199	--	--	--	--
434339096381101	81-05-06	--	--	--	--	--	618	--	--	--	--
PENNINGTON											
435959103181301	80-10-21	.0	1.1	1.0	10	212	217	.29	.23	.21	.020

STATION NUMBER	DATE OF SAMPLE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N) (00610)	NITRO-GEN, NITRITE DIS-SOLVED (MG/L AS N) (00613)	NITRO-GEN, NITRITE TOTAL (MG/L AS N) (00615)	NITRO-GEN, NITRATE DIS-SOLVED (MG/L AS N) (00618)	NITRO-GEN, NITRATE TOTAL (MG/L AS N) (00620)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N) (00625)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N) (00631)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N) (00630)	PHOS-PHORUS, TOTAL (MG/L AS P) (00665)	IODIDE, DIS-SOLVED (MG/L AS I) (71865)
BUTTE											
443839103514701	80-10-22	.020	.000	.000	.08	.10	.13	.08	.10	--	.000
443716103522501	80-10-22	.020	.000	.000	.13	.15	.12	.13	.15	--	.000
LINCOLN											
431529096460401	81-05-14	--	--	--	--	--	--	--	--	--	--
MINNEHAHA											
434508096372701	81-05-05	--	--	--	--	--	--	.10	--	--	.000
434414096380301	81-05-06	--	--	--	--	--	--	3.3	--	--	.000
434432096364201	80-10-01	.080	--	.000	--	.37	2.20	.14	.37	.020	.120
	81-05-06	--	--	--	--	--	--	2.6	--	--	.000
434429096361801	80-10-01	.060	--	.000	--	2.7	1.40	2.3	2.7	.040	.000
434400096362201	80-10-01	.040	--	.010	--	16	9.60	180	16	.030	.020
	81-05-06	--	--	--	--	--	--	3.4	--	--	.000
434332096371501	80-10-02	.000	--	.000	--	.00	.62	.01	.00	.080	.070
	81-05-06	--	--	--	--	--	--	.19	--	--	.000
434339096381101	81-05-06	--	--	--	--	--	--	.03	--	--	.000
PENNINGTON											
435959103181301	80-10-21	.020	.000	.000	.00	.00	.23	.00	.00	--	.000

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	BROMIDE DIS-SOLVED (MG/L AS BR) (71870)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P) (00666)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C) (00681)	CYANIDE TOTAL (MG/L AS CN) (00720)
BUTTE					
443839103514701	80-10-22	.10	.220	--	--
443716103522501	80-10-22	.00	.220	3.6	--
LINCOLN					
431529096460401	81-05-14	--	--	--	--
MINNEHAHA					
434508096372701	81-05-05	.10	--	--	.00
434414096380301	81-05-06	.40	--	--	.00
434432096364201	80-10-01	.30	--	32	.01
	81-05-06	.20	--	--	.00
434429096361801	80-10-01	.10	--	7.0	.00
434400096362201	80-10-01	.70	--	19	.04
	81-05-06	.60	--	--	.03
434332096371501	80-10-02	.00	--	4.2	.00
	81-05-06	.10	--	--	.00
434339096381101	81-05-06	.40	--	--	.00
PENNINGTON					
435959103181301	80-10-21	.00	.250	6.9	--

STATION NUMBER	LOCAL IDENT-I-FIER	DATE OF SAMPLE	TIME	ALUM-INUM, DIS-SOLVED (UG/L AS AL) (01106)	ARSENIC DIS-SOLVED (UG/L AS AS) (01000)	BARIUM, DIS-SOLVED (UG/L AS BA) (01005)	BORON, DIS-SOLVED (UG/L AS B) (01020)	CADMIUM DIS-SOLVED (UG/L AS CD) (01025)	CHRO-MIUM, DIS-SOLVED (UG/L AS CR) (01030)
BUTTE									
443839103514701	8N 2E22BBDC	80-10-22	--	10	3	100	10	<1	10
443716103522501	8N 2E26DDDB	80-10-22	--	20	4	200	0	<1	0
LINCOLN									
431529096460401	98N50W32DDDD	81-05-14	1100	--	--	--	--	--	--
MINNEHAHA									
434508096372701	103N49W 5CACA	81-05-05	1400	30	--	--	320	--	0
434414096380301	103N49W 7DAC	81-05-06	1335	20	--	--	300	--	0
434432096364201	103N49W 8ADA	80-10-01	1630	10	--	--	710	--	0
		81-05-06	1045	20	--	--	1700	--	0
434429096361801	103N49W 9BDCB	80-10-01	1730	10	--	--	90	--	0
434400096362201	103N49W 9CCDA	80-10-01	0700	20	--	--	20	--	0
		81-05-06	0800	10	--	--	380	--	0
434332096371501	103N49W17ACCC	80-10-02	0800	0	--	--	360	--	0
		81-05-06	1500	10	--	--	230	--	0
434339096381101	103N49W18ACA	81-05-06	1620	10	--	--	430	--	0
PENNINGTON									
435959103181301	1N 7E32CADB	80-10-21	--	40	2	100	20	1	0

BEST DOCUMENT AVAILABLE

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	COPPER, DIS-SOLVED (UG/L AS CU) (01040)	IRON, DIS-SOLVED (UG/L AS FE) (01046)	LEAD, DIS-SOLVED (UG/L AS PB) (01049)	LITHIUM DIS-SOLVED (UG/L AS LI) (01130)	MERCURY DIS-SOLVED (UG/L AS HG) (71890)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG) (71900)	MANGA-NESE, DIS-SOLVED (UG/L AS MN) (01056)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO) (01060)	SELE-NIUM, DIS-SOLVED (UG/L AS SE) (01145)	SILVER, DIS-SOLVED (UG/L AS AG) (01075)
AURORA											
433832098275001	81-06-25	--	--	--	--	--	<.2	--	--	--	--
BUTTE											
443839103514701	80-10-22	0	20	1	20	.0	--	4	<10	7	--
443716103522501	80-10-22	7	20	3	6	.0	--	<1	<10	1	--
LINCOLN											
431529096460401	81-05-14	--	--	--	--	--	--	--	--	--	--
MINNEHAHA											
434508096372701	81-05-05	--	20	--	--	--	.2	--	--	--	0
434414096380301	81-05-06	--	40	--	--	--	--	--	--	--	0
434432096364201	80-10-01	--	40	--	--	--	.1	--	--	--	0
	81-05-06	--	20	--	--	--	.3	--	--	--	0
434429096361801	80-10-01	--	90	--	--	--	.1	--	--	--	0
434400096362201	80-10-01	--	60	--	--	--	.2	--	--	--	0
	81-05-06	--	10	--	--	--	.3	--	--	--	0
434332096371501	80-10-02	--	770	--	--	--	.0	--	--	--	0
	81-05-06	--	230	--	--	--	.2	--	--	--	0
434339096381101	81-05-06	--	5200	--	--	--	.3	--	--	--	0
PENNINGTON											
435959103181301	80-10-21	3	80	2	20	.0	--	7	<10	0	0

STATION NUMBER	DATE OF SAMPLE	STRON-TIUM, DIS-SOLVED (UG/L AS SR) (01080)	VANA-DIUM, DIS-SOLVED (UG/L AS V) (01085)	ZINC, DIS-SOLVED (UG/L AS ZN) (01090)	GROSS ALPHA, DIS-SOLVED (PCI/L AS U-NAT) (01515)	GROSS ALPHA, DIS-SOLVED (UG/L AS U-NAT) (80030)	GROSS BETA, DIS-SOLVED (PCI/L AS CS-137) (03515)	GROSS BETA, DIS-SOLVED (PCI/L AS SR/YT-90) (80050)	RADIUM 226, DIS-SOLVED, RADON METHOD (PCI/L) (09511)	URANIUM NATURAL DIS-SOLVED (UG/L AS U) (22703)	URANIUM DIS-SOLVED, EXTRAC-TION (UG/L) (80020)
BUTTE											
443839103514701	80-10-22	2300	4.0	<3	19	28	6.8	6.2	1.4	9.6	--
443716103522501	80-10-22	320	1.0	20	14	20	4.4	4.0	1.3	3.7	--
LINCOLN											
431529096460401	81-05-14	--	--	--	--	--	--	--	--	--	--
MINNEHAHA											
434508096372701	81-05-05	--	--	20	--	--	--	--	--	--	--
434414096380301	81-05-06	--	--	590	--	--	--	--	--	--	--
434432096364201	80-10-01	--	--	5	--	--	--	--	--	--	--
	81-05-06	--	--	7	--	--	--	--	--	--	--
434429096361801	80-10-01	--	--	170	--	--	--	--	--	--	--
434400096362201	80-10-01	--	--	230	--	--	--	--	--	--	--
	81-05-06	--	--	30	--	--	--	--	--	--	--
434332096371501	80-10-02	--	--	200	--	--	--	--	--	--	--
	81-05-06	--	--	60	--	--	--	--	--	--	--
434339096381101	81-05-06	--	--	160	--	--	--	--	--	--	--
PENNINGTON											
435959103181301	80-10-21	490	.0	20	16	24	8.8	8.2	4.8	--	.29

WATER QUALITY DATA, WATER YEAR OCTOBER 1980 TO SEPTEMBER 1981

STATION NUMBER	DATE OF SAMPLE	CARBON-14, DISS APPARENT AGE (YEARS BP) (28004)	C-13/C-12 STABLE ISOTOPE RATIO PER MIL (82081)	POTASSIUM 40 DISSOLVED (PCI/L AS K40) (82068)
AURORA				
433832098275001	81-06-25	--	--	--
BUTTE				
443839103514701	80-10-22	--	--	--
443716103522501	80-10-22	--	--	--
LINCOLN				
431529096460401	81-05-14	38200	-11.7	--
MINNEHAHA				
434508096372701	81-05-05	--	--	2.6
434414096360301	81-05-06	--	--	1.6
434432096364201	80-10-01	--	--	--
	81-05-06	--	--	9.0
434429096361801	80-10-01	--	--	--
434400096362201	80-10-01	--	--	--
	81-05-06	--	--	6.0
434332096371501	80-10-02	--	--	--
	81-05-06	--	--	2.8
434339096381101	81-05-06	--	--	4.0
PENNINGTON				
435959103181301	80-10-21	--	--	--

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FACTORS FOR CONVERTING INCH-POUND UNITS TO INTERNATIONAL SYSTEM UNITS (SI)

The following factors may be used to convert the inch-pound units published herein to the International System of Units (SI). This report contains both the inch-pound and SI unit equivalents in the station manuscript descriptions.

Multiply inch-pound units	By	To obtain SI units
	Length	
inches (in)	2.54x10^{1}	millimeters (mm)
	2.54x10^{-2}	meters (m)
feet (ft)	3.048x10^{-1}	meters (m)
miles (mi)	1.609x10^{0}	kilometers (km)
	Area	
acres	4.047x10^{3}	square meters (m^2)
	4.047x10^{-1}	square hectometers (hm^2)
	4.047x10^{-3}	square kilometers (km^2)
square miles (mi^2)	2.590x10^{0}	square kilometers (km^2)
	Volume	
gallons (gal)	3.785x10^{0}	liters (L)
	3.785x10^{0}	cubic decimeters (dm^3)
	3.785x10^{-3}	cubic meters (m^3)
million gallons	3.785x10^{3}	cubic meters (m^3)
	3.785x10^{-3}	cubic hectometers (hm^3)
cubic feet (ft^3)	2.832x10^{1}	cubic decimeters (dm^3)
	2.832x10^{-2}	cubic meters (m^3)
cfs-days	2.447x10^{3}	cubic meters (m^3)
	2.447x10^{-3}	cubic hectometers (hm^3)
acre-feet (acre-ft)	1.233x10^{3}	cubic meters (m^3)
	1.233x10^{-3}	cubic hectometers (hm^3)
	1.233x10^{-6}	cubic kilometers (km^3)
	Flow	
cubic feet per second (ft^3/s)	2.832x10^{1}	liters per second (L/s)
	2.832x10^{1}	cubic decimeters per second (dm^3/s)
	2.832x10^{-2}	cubic meters per second (m^3/s)
gallons per minute (gal/min)	6.309x10^{-2}	liters per second (L/s)
	6.309x10^{-2}	cubic decimeters per second (dm^3/s)
	6.309x10^{-5}	cubic meters per second (m^3/s)
million gallons per day	4.381x10^{1}	cubic decimeters per second (dm^3/s)
	4.381x10^{-2}	cubic meters per second (m^3/s)
	Mass	
tons (short)	9.072x10^{-1}	megagrams (Mg) or metric tons